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Grazing Fee (Case Studies of
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**POTENTIAL IMPACTS ON LOCAL INCOME AND EMPLOYMENT OF
A CHANGE IN THE FEDERAL GRAZING FEE (CASE STUDIES OF 13 AREAS IN THE WEST)**

Report

For

USDA-Forest Service (FS)

And

USDI-Bureau of Land Management (BLM)

Submitted By:

USDA-Economic Research Service (ERS)

Under

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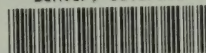
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Report

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16. Abstract (Limit 200 words) Potential impacts were determined through economic interindustry analysis income and employment in 13 livestock-dependent counties in 13 Western States. The counties selected, indicated that local economics were highly dependent on the livestock industry and on Federal grazing. Forage dependency on Federal rangelands vary from 38 percent in Nevada to 2 percent in South Dakota. Changes in total net local personal income per AUM were calculated at the \$2, \$4, \$6, \$8, and \$10 dollar fee levels. Negative effects on income at a \$2 fee level ranged from a \$.42 loss in Catrau County, New Mexico to a \$.65 in Gila County, Arizona, at a \$6 fee level, impacts on local income ranged from \$2.49/animal unit month (AUM) in Billings County, North Dakota \$4.83/AUM in Millard County, Utah.				
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**ESTIMATED IMPACTS ON LOCAL INCOME AND EMPLOYMENT OF A
CHANGE IN THE FEDERAL GRAZING FEE (APPLICATION OF THE FOREST
SERVICE IMPLAN I/O SYSTEM TO 13 WESTERN COUNTIES)**

By

Hans Radtke and Ray Brokken¹

INTRODUCTION

In 1978, Congress established a grazing fee formula under the Public Rangelands Improvement Act (PRIA), with provisions for it to be effective through 1985. Section 12(b) of this Act requires "no later than December 31, 1985, the Secretaries (of Agriculture and Interior) shall report to the Congress...their evaluation of the fee established in Section 6...and other grazing fee options, and their recommendations to implement a grazing fee schedule for 1986 and subsequent grazing years." This report contributes to the required evaluation by analyzing the potential impacts of changes in federal grazing fees on local income and employment in 13 livestock-dependent counties in 13 Western states. The counties were selected for analysis because information available suggested that the local economics were highly dependent on the livestock industry and on federal grazing. The impacts on a

1. Hans Radtke is associate professor of Department of Agricultural and Resource Economics, Oregon State University, on temporary assignment. Ray Brokken is Agricultural Economist, Economic Research Service, USDA and professor (courtesy) of Department of Agricultural and Resource Economics, Oregon State University, Corvallis, Oregon, respectively.



statewide basis are also analyzed for Oregon so as to give a comparison between different size economies.

Forage dependency on Bureau of Land Management (BLM) and U.S. Forest Service (USFS) lands in the West ranges from 38 percent in Nevada to 2 percent in South Dakota and Washington (Appendix I). While the average federal forage dependency for the Western states (plus the Dakotas) is only 10 percent, such dependencies can be much higher for some local communities. The impact of federal grazing fee changes may be small from a national or regional perspective; however, such impacts on individual ranchers or communities can be very significant. The impact of federal grazing policy on local communities is affected by their economic dependency on livestock as well as on federal forages. For example, Harney County, Oregon is very dependent on the livestock sector (Appendix II, Oregon lists a county income-to-livestock ratio of 994 for Harney County) and also very dependent on federal grazing (33% federal grazing dependency). For larger, more diversified economies, community impacts of federal grazing policies may be relatively less important.

A software system called IMPLAN, developed by the USFS², is used to construct input/output models for each area from a secondary data set derived from the U.S. Department of Commerce, Bureau of Economic Analysis and other national sources. In this system, models may be developed for areas

2. Alward, Gregory and Charles J. Palmer. "IMPLAN: An Input-Output Analysis System for Select Service Planning." Unpublished manuscript, Rocky Mountain Forest and Range Experiment Station, USDA Forest Service. Fort Collins, Colorado.

consisting of any county or group of counties. The IMPLAN system uses secondary data and national interindustry relationships to estimate economic impacts resulting from any primary changes in the area's economy. The purpose of this paper is to estimate the impact of a federal grazing fee change on a variety of economies—one in each Western state. Another paper is part of this grazing fee study, "IMPLAN vs. Primary Data Input/Output Models: A Comparison of Impact Estimates for Hypothetical Changes in the Federal Grazing Fee." We concluded that the results estimated by the IMPLAN models are usually higher than those estimated by primary data models. Impacts obtained from IMPLAN should, therefore, be considered high or "upper limit" impacts. The question of which models (primary versus secondary) are more accurate was not answered. Secondary data (IMPLAN) may not estimate economic relations that exist in an area, as well as primary data models. A main problem with primary data models is in the quality of sample data. Such problems as enumerator qualifications, biased sampling, and biased responses may affect the accuracy of primary data estimates. With limited time and budget, use of secondary data models may be the only feasible way to estimate the impacts of national policy changes on local communities. It was decided to estimate the impacts of grazing fee changes with IMPLAN models because they are relatively inexpensive and accessible. Similar impact estimates can be carried out for any county or a group of counties in the West.

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Reaction to Grazing Fee Changes

The economic impact of increases in public grazing fees on individual rancher's income and local community income depends partly on the rancher's adjustment in organization of ranch enterprises and expenditures. Two sets of adjustments were assumed for purposes of the present analysis. The first assumption represents the least possible rancher reaction to a fee increase; that is, the rancher simply pays more for his federal grazing, and makes no adjustments in utilization. This is called the minimum rancher response. The second assumption, which is called a herd adjustment response, usually leads to much larger impacts of possible fee increases. In some instances, especially at higher grazing fees, the minimum rancher's response will result in greater local income loss. This is because the initial loss of income to the rancher is greater than the loss of income associated with reduced livestock related expenditures. Under the second assumption, utilization of federal grazing is assumed to decline as the fee is increased. This assumption is made in recognition of the high variability among parcels in the value of range for grazing. As fees are increased, the forage value for grazing is exceeded on progressively more parcels. Losses can be averted by discontinuing usage of such parcels. A decline of up to 50 percent in utilization of public range is assumed as the fee is increased to the 1982 average private grazing lease rate for each particular state or to \$8 per AUM (Animal Unit Month), whichever is smaller.

A symmetric triangular frequency distribution in the percent reduction in utilization of public grazing relative to fees charged was assumed. Under

such a distribution, no reduction is made at the 1983 fee level, but as the fee is increased up to the smaller of the 1982 average private grazing lease rate or \$8, the utilization of federal range drops by as much as 50 percent of the 1982 utilization. For example, suppose a ranching area with a total of 10,000 cows is 50 percent dependent on federal range; i.e., out of a total of 120,000 AUM's of feed, 60,000 AUM's comes from federal range. At a fee of \$8.00 per AUM, half (30,000 AUM's) of federal AUM's are not utilized. This amounts to a 25 percent reduction in total feed utilization in the area and consequently, a total herd reduction in the number of beef cows of 25 percent. This assumes that private feed sources can be substituted for federal range on a one-to-one rate in terms of AUM's. The details of these computations and the 1982 average private grazing lease rate are shown in Appendix III and IV.

The fee levels for which impacts were calculated are displayed in Table I. The 1983 fee was \$1.40, so the fee increases calculated are the fee levels minus \$1.40 for most states. The 1983 National Grasslands fee is \$2.86 which was used to calculate fee increases in North and South Dakota.

Impact Analysis of Grazing Fee Changes

A regional input-output model provides a "still-life" picture of a regional economy. The input-output problem involves determining the magnitudes of inter-industry as well as total economy impacts of any change in consumer demand, resource base, or government policy. The overall impact can be

Table I. Grazing fee levels for which economic impacts are estimated.

State	CountyFee Levels in \$.....			
Arizona	Gila	2.00	2.53/a	—	—
California	Modoc	2.00	4.00	6.00	8.00
Colorado	Gunnison	2.00	4.00	6.00	8.00
Idaho	Owyhee	2.00	4.00	6.00	7.98/a
Montana	Beaverhead	2.00	4.00	6.00	8.00
Nevada	Elko	2.00	4.00	5.70/a	—
New Mexico	Catron	2.00	4.00	6.00	6.26/a
North Dakota	Billings	—/b	4.00	6.00	8.00
Oregon	Harney	2.00	4.00	6.00	7.70/a
South Dakota	Fall River	—/b	4.00	6.00	8.00
Utah	Millard	2.00	4.00	6.00	8.00
Washington	Garfield	2.00	4.00	6.00	6.67/a
Wyoming	Sublette	2.00	4.00	6.00	8.00
State of Oregon—all		2.00	4.00	6.00	7.70/a

a/ Impacts of grazing fee rates are analyzed at rates below or equal to state private lease rates or at \$8.00 per AUM, whichever is smaller. This assumes that if the grazing fee were to be increased higher than the state average (or at \$8.00 per AUM), most users would drop out of the market for federal grazing.

/b National Grasslands grazing fees are \$2.86.

decomposed into direct, indirect, and induced impacts.

Direct impacts result from an initial change. The indirect income impact is the decrease in personal income of related sectors. Then, the induced impacts occur as wage earners and businesses experience changes in their salaries and profits; and consequently, their personal expenditures decrease. The sum of these direct, indirect, and induced effects is the total income effect.

In the case of the minimum rancher response, the increase in grazing fee causes an initial change in rancher's income. The decrease in personal income of sectors selling to the rancher's household is the indirect effect. Then, the induced impacts occur as wage earners and businesses experience reductions in their salaries and profits; and consequently, personal expenditures decrease.

For the herd adjustment response, the resulting loss of income to the livestock sector is the direct income impact. The indirect impact occurs as other businesses relying on expenditures of the livestock sector, experience lower sales and a decrease in personal income. The induced impacts are the results of lower wage earnings and business profits which lead to lower expenditures.

Computed Impacts Under Minimum Rancher Response

With no change in his operation the rancher loses a certain part of enterprise net income (or increases enterprise loss). As a result of a federal fee increase, the reduction in rancher's income causes the rancher to

spend less on consumer items, which in turn reduces income for other local business and wage earners.

The grazing fee revenues that are collected by the USFS (and Section 15 lands for the BLM) are distributed so that 50 percent of the revenues are returned to the local community for rangeland maintenance and improvements, while another 25 percent is returned to local government. The remaining 25 percent is collected by the Federal Treasury (For Section 3 of BLM lands, the formula is 50%, 12.5%, and 37.5%). A grazing fee increase from \$1.40 to \$2.00 per AUM in USFS lands would decrease the rancher's income by \$.60 per AUM, while increasing the local rangeland maintenance and investment funds by \$.30 per AUM. Another \$.15 (25% of \$.60) is returned to the local government.

The resulting changes in total net local personal income depend on the degree to which the various firms and households in the local economy are interrelated. The most important factor determining the size of the interrelationships is the degree of leakage of purchases outside the area. Sectors which import a large share of their first round purchases generally have smaller multipliers than those purchasing a larger share of inputs locally. A small area that contains only a few sectors will lose many of its sales and resulting local incomes to surrounding areas. Some types of sectors also tend to purchase more locally. For example, ranchers may buy most of their feed, seed, and labor locally. Gasoline retailers on the other hand, may purchase most of their product from refineries outside the area.

The relationship between the change in household income and resulting personal income, and also a change in final demand (sales) and resulting

personal income, are summarized in Table II. For example, as a result of a negative one dollar change in local household income, a \$.25 decrease in local personal income would be expected in the very small Billings County, North Dakota economy (populations and total income per county are shown in Appendix II). In a larger economy such as Millard County, Utah, which is about five times as large as Billings County, the resulting change in personal income would be a decrease of \$.72. When such changes are analyzed for a large regional economy (Oregon, for example, an economy that is about 2,000 times larger than the Billings County economy), the result is a negative \$1.34 change of state personal income. The change in local personal income as a result of changes in final demand in the other sectors generally also increase as the economy increases in size.

The effect of the grazing fee increases per AUM are estimated in Table I of Appendix V and summarized per level of change in Table III in this text. The rancher's initial loss in household income plus his decreased expenditures have a negative effect on the local economy, while the rangeland investment funds and local government monies increase local income.

The resulting changes in total net local personal income per AUM for the thirteen Western counties resulting from a \$.60 (from \$1.40 to \$2.00) increase in the grazing fee of USFS lands range from a \$.42 loss in Catron County, New Mexico to a \$.65 loss in Gila County, Arizona. For BLM Section 3 lands, because a greater percentage is collected by the Federal Treasury, the total net local personal income loss per AUM increases to \$.49 for Catron County, New Mexico and \$.74 for Gila County, Arizona. When impacts are

Table II. Local personal income impacts of a \$ change in household income and a \$ change in final demand of several sectors in selected areas. Results of the USFS-IMPLAN Input-Output Model.

State	County	Personal consumption (Household income)	Local government expenditure	Rangeland improvements	Meat animals	Feed and grazing
Arizona	Gila	0.71	0.62	0.64	0.59	0.61
California	Modoc	0.57	0.56	0.62	0.57	0.62
Colorado	Gunnison	0.65	0.65	0.71	0.47	0.72
Idaho	Owyhee	0.42	0.52	0.57	0.55	0.61
Montana	Beaverhead	0.67	0.67	0.66	0.48	0.62
Nevada	Elko	0.68	0.74	0.69	0.40	0.67
New Mexico	Catron	0.31	0.36	0.76	0.26	0.52
North Dakota	Billings	0.25	0.27	0.50	0.47	0.56
Oregon	Harney	0.65	0.73	0.60	0.51	0.62
South Dakota	Fall River	0.60	0.56	0.55	0.35	0.58
Utah	Millard	0.72	0.69	0.70	0.67	0.68
Washington	Garfield	0.45	0.44	0.49	0.54	0.60
Wyoming	Sublette	0.79	0.83	0.83	0.46	0.65
Oregon	All	1.34	0.53	.96	0.89	0.65

Table III. Summary of estimated negative impacts on local income of alternative Federal grazing fees per AUM -- 1982.

State	County	USFS fee				BLM fee			
		\$2.00	\$4.00	\$6.00	\$8.00	\$2.00	\$4.00	\$6.00	\$8.00
Arizona	Gila (2.53)/a	0.65	1.22	--	--	0.74	1.40	--	--
California	Modoc	0.58	2.51	4.44	6.37	0.67	2.89	5.12	7.34
Colorado	Gunnison	0.59	2.57	4.55	6.53	0.69	2.97	5.26	7.54
Idaho	Owyhee (7.98)/a	0.53	2.28	4.03	5.37	0.60	2.62	4.63	6.62
Montana	Beaverhead	0.62	2.68	4.74	6.80	0.71	3.08	5.45	7.82
Nevada	Elko (5.70)/a	0.61	2.64	4.37	--	0.71	3.06	5.05	--
New Mexico	Catron (6.26)/a	0.42	1.83	3.24	3.42	0.49	2.13	3.76	3.97
North Dakota	Billings (2.86)/b	--	0.90	2.49	4.08	--	1.02	2.81	4.61
Oregon	Harney (7.70)/a	0.62	2.69	4.77	6.53	0.72	3.10	5.49	7.52
South Dakota	Fall River (2.86)/b	--	1.18	3.26	5.33	--	1.35	3.71	6.07
Utah	Millard	0.63	2.73	4.83	6.93	0.73	3.15	5.57	7.99
Washington	Garfield (6.67)/a	0.57	2.47	4.37	5.01	0.65	2.80	4.96	5.68
Wyoming	Sublette	0.62	2.68	4.74	6.80	0.72	3.13	5.53	7.94
State of Oregon --(7.70)/a		0.88	3.82	6.76	9.26	1.00	4.33	7.66	10.49

a/ Impacts of grazing fee rates are analyzed at rates below or equal to state private lease rates shown in parenthesis or at \$8.00 per AUM, whichever is smaller. This assumes that if the grazing fee were to be increased to higher than the state average (or at \$8.00 per AUM), most users would drop out of the market for federal grazing.

b/ The National Grasslands fees are \$2.86.

calculated for a large economy such as the State of Oregon, these personal income losses per AUM are \$.88 and \$1.00 respectively for USFS and for BLM grazing

The total net loss and percentage losses of local income estimated in Appendix V and are displayed for all areas in Table IV and V. For Catron County, New Mexico, for example, an increase of the federal grazing fee to the state average private lease rate of \$6.26 would generate a net local income loss of \$947,926 or a 7.42 percent decrease in the local economy.

Computed Impacts Under Herd Reduction Response

It was estimated with the use of the symmetric triangular distribution (Appendix III) that the ranchers negative response to fee increases would be to decrease the use of federal AUM's by amounts ranging from a low of 4 percent at the \$2.00 level in Wyoming, Colorado, Montana, Utah, and California, to 50 percent in Idaho, New Mexico, Oregon, Arizona, Nevada, and Washington at the maximum increase analyzed. In addition, because they pay for the fee increases out of household income, the ranchers lose part of their income on the remaining AUM's that they continue to use at the higher fee levels. These total and percentage income losses estimated in Appendix V are displayed in Tables VI and VII. At the \$8.00 grazing fee level, the combined effect of this loss of rancher's income as well as the economic loss associated with a reduction in the use of federal AUM's, is a total of \$19,038, a .11 percent reduction for the Garfield County, Washington economy, which has a small amount of total federal AUM's. For a more dependent area, such as Harney County, Oregon, a grazing fee increase to \$8.00 would result

Table IV. Summary of estimated total local economic impact as a result of grazing fee increases (minimum response in 1982 dollars).

State	County	Fee levels in dollars			
		\$2.00	\$4.00	\$6.00	\$8.00
Arizona	Gila(2.53)/a	134590	138780	—	—
California	Modoc	42408	183767	325126	466485
Colorado	Gunnison	73962	320502	567043	813583
Idaho	Owyhee (7.98)/a	224706	973724	1722743	2464272
Montana	Beaverhead	116661	505531	894401	1283271
Nevada	Elko(5.70)/a	95636	414421	685388	—
New Mexico	Catron(6.26)/a	117028	507121	897214	947926
North Dakota	Billings(2.86)/b	—	110746	305039	499332
Oregon	Harney(7.70)/a	249588	1081546	1913505	2620670
South Dakota	Fall River(2.86/b)	—	96278	265187	434095
Utah	Millard	150184	650798	1151412	1652026
Washington	Garfield (6.67)/a	1490	6458	11426	13091
Wyoming	Sublette	141169	611733	1082298	1552862
State of Oregon —(7.70)/a		1393160	6039570	10685980	14637715

a/ Impacts of grazing fee rates are analyzed at rates below or equal to state private lease rates shown in parenthesis or at \$8.00 per AUM, whichever is smaller. This assumes that if the grazing fee were to be increased to higher than the state average (or at \$8.00 per AUM), most users would drop out of the market for federal grazing.

b/ The National Grasslands fees are \$2.86.

Table V. Summary of estimated local economic impacts as a result of grazing fee increases under the minimum producer response model. Impacts are in percent of total county (and the state of Oregon) economy.

State	County	Fee levels in dollars			
		\$2.00	\$4.00	\$6.00	\$8.00
Arizona	Gila(2.53)/a	0.07	0.07	--	--
California	Modoc	0.08	0.33	0.58	0.83
Colorado	Gunnison	0.10	0.45	0.80	1.15
Idaho	Owyhee (7.98)/a	0.62	2.69	4.76	6.81
Montana	Beaverhead	0.24	1.04	1.84	2.64
Nevada	Elko(5.70)/a	0.08	0.33	0.55	--
New Mexico	Catron(6.26)/a	0.92	3.97	7.03	7.42
North Dakota	Billings(2.86)/b	--	1.20	3.30	5.41
Oregon	Harney(7.70)/a	0.43	1.88	3.33	4.55
South Dakota	Fall River(2.86)/b	--	0.18	0.51	0.83
Utah	Millard	0.35	1.51	2.67	3.83
Washington	Garfield (6.67)/a	0.01	0.04	0.07	0.08
Wyoming	Sublette	0.44	3.81	3.37	4.84
State of Oregon --(7.70)/a		0.01	0.03	0.05	0.07

a/ Impacts of grazing fee rates are analyzed at rates below or equal to state private lease rates shown in parenthesis or at \$8.00 per AUM, whichever is smaller. This assumes that if the grazing fee were to be increased to higher than the state average (or at \$8.00 per AUM), most users would drop out of the market for federal grazing.

b/ The National Grasslands fees are \$2.86.

Table VI. Summary of estimated total local economic impact as a result of grazing fee increases under the herd adjustment response model in 1982 dollars.

State	County	Fee levels in dollars			
		\$2.00	\$4.00	\$6.00	\$8.00
Arizona	Gila(2.53)/a	548382	960316	—	—
California	Modoc	72917	289399	464328	608718
Colorado	Gunnison	122058	482997	779836	1012574
Idaho	Owyhee (7.98)/a	418992	1601067	2558435	3287353
Montana	Beaverhead	184759	728839	1181059	1519038
Nevada	Elko(5.70)/a	198814	760979	1127502	—
New Mexico	Catron(6.26)/a	188113	721680	1087361	1124854
North Dakota	Billings(2.86)/b	—	174292	432975	615358
Oregon	Harney(7.70)/a	435370	1629450	2631616	3292961
South Dakota	Fall River(2.86)/b	—	150815	381122	570892
Utah	Millard	261839	1017320	1670556	2193631
Washington	Garfield (6.67)/a	2665	9979	16173	19038
Wyoming	Sublette	220912	885874	1429603	1820525
State of Oregon —(7.70)/a		2632627	9866725	11109759	20410102

a/ Impacts of grazing fee rates are analyzed at rates below or equal to state private lease rates shown in parenthesis or at \$8.00 per AUM, whichever is smaller. This assumes that if the grazing fee were to be increased to higher than the state average (or at \$8.00 per AUM), most users would drop out of the market for federal grazing.

b/ The National Grasslands fees are \$2.86.

Table VII. Summary of estimated percentage local economic impacts as a result of grazing fee increases, under the herd adjustment response model. Impacts are in percent of total county (and the state of Oregon) economy.

State	County	Fee levels in \$			
		\$2.00	\$4.00	\$6.00	\$8.00
Arizona	Gila(2.53)/a	0.27	0.47	—	—
California	Modoc	0.13	0.51	0.82	1.08
Colorado	Gunnison	0.17	0.68	1.10	1.43
Idaho	Owyhee (7.98)/a	1.16	4.42	7.07	9.08
Montana	Beaverhead	0.38	1.50	2.43	3.12
Nevada	Elko(5.70)/a	0.16	0.61	0.90	—
New Mexico	Catron(6.26)/a	1.47	5.65	8.51	8.81
North Dakota	Billings(2.86)/b	—	1.89	4.69	6.66
Oregon	Harney(7.70)/a	0.76	2.83	4.57	5.72
South Dakota	Fall River(2.86)/b	—	0.29	0.73	1.09
Utah	Millard	0.61	2.36	3.87	5.09
Washington	Garfield (6.67)/a	0.02	0.06	0.09	0.11
Wyoming	Sublette	0.69	2.76	4.45	5.67
State of Oregon —(7.70)/a		0.01	0.05	0.08	0.10

a/ Impacts of grazing fee rates are analyzed at rates below or equal to state private lease rates shown in parenthesis or at \$8.00 per AUM, whichever is smaller. This assumes that if the grazing fee were to be increased to higher than the state average (or at \$8.00 per AUM), most users would drop out of the market for federal grazing.

b/ The National Grasslands fees are \$2.86.

in a \$3,292,961 (or 5.72 percent) loss in local personal income. The relative impact on a statewide basis, although small on a percentage basis, .10 percent, amounts to a total of \$20,410,102 in Oregon.

SUMMARY

The purpose of this report was to estimate local economic impacts of hypothetical grazing fee increases obtained using a secondary input/output model (IMPLAN) developed by the Forest Service. It was decided to estimate the impacts of grazing fee changes with IMPLAN models because they are relatively inexpensive and accessible.

When IMPLAN was compared to impacts estimated throughout the West using primary data models, the IMPLAN estimates were greater in almost every instance. These results should, therefore, be considered the maximum economic impacts that may take place.

The local economic impact of a federal grazing fee increase varies from community to community depending on several factors. Some of these include: the degree of dependency of the livestock sector on federal grazing in the area, the size of the livestock sector in relation to total economic activity, and the economic diversification of the local economy.

When ranchers are assumed to reduce their use of federal grazing in response to grazing fee increases, the percent change in a county's economy ranges from a low of .02 percent in Garfield County, Washington to a high of

1.47 percent in Catron County, New Mexico at a fee increase of \$.60 per AUM (from \$1.40 to \$2.00). At a much larger fee increase (from \$1.40 to \$8.00), the percentage change in the county's economy ranges from a low of .11 percent for Garfield County, Washington to a high of 9.08 percent in Owyhee County, Idaho. In a large diversified economy, such as the state of Oregon, the percentage change in the economy, as a result of a federal grazing fee increase to the maximum considered (\$7.70), is about .10 percent. Similar impact estimates can be carried out for any county or group of counties in the West.

Input/output analysis uses static models that may not represent changes that can take place in a community as industries and supporting services are scaled down. For example, it may be difficult to reduce a hospital below a certain size without damaging the services it provides. There may be other social and cultural impacts that take place in a community resulting from economic changes. No attempt is made to analyze such impacts.

APPENDICES

- Appendix I** **Livestock dependency on Federal grazing for the Western states.**
- Appendix II** **County income, livestock numbers, and livestock dependency on Federal grazing by counties in the Western states.**
- Appendix III** **Triangular distribution.**
- Appendix IV** **Private leasing rates by states.**
- Appendix V** **Estimated impacts on local income and employment of a change in the Federal grazing fee (application of the Forest Service IMPLAN I/O system to 13 Western Counties).**

**APPENDIX I. Federal Grazing Dependencies and Livestock Dependencies
for The Western States (1982)**

State	Type ^{1/}	USFS			Type	BLM			Total Federal AUM's Sold	Total Beef Cows & Ewes AUM's in State ^{4/}	Percent Dependent on Federal Grazing
		Permitted AUM's ^{2/}	Paid AUM's ^{2/}	Percent Used		Active Use ^{3/}	Non-use ^{3/}	Percent Used			
Arizona	(NF)	1,396,981	1,235,903	82	Total	529,839	134,599	75	1,765,742	5,538,294	32
					(Sect 15)	143,998	5,488	96			
California	(NFS)	605,377	554,325	92	(Sect 3)	385,841	129,111	67	918,406	17,832,852	5
	(NF)	601,806	550,754	92	(Sect 15)	364,081	46,943	87			
	(LUP)	3,571	3,571	100	(Sect 3)	132,632	1,339	99			
Colorado	(NFS)	1,136,175	1,016,788	89	(Sect 3)	231,449	45,604	80			
	(NF)	960,300	843,733	88	Total	502,921	184,584	59	1,519,709	16,301,466	9
	(NG)	175,860	173,040	98	(Sect 15)	55,185	2,407	96			
	(LUP)	15	15	100	(Sect 3)	447,736	182,177	59			
Idaho	(NFS)	961,911	812,753	84	Total	1,151,140	244,501	79	1,963,893	12,075,660	16
	(NF)	933,274	790,876	85	(Sect 15)	36,675	2,752	92			
	(NG)	28,637	21,857	76	(Sect 3)	1,114,465	241,749	78			
Montana	(NF)	666,241	613,547	92	Total	1,111,612	873,008	92			
					(Sect 15)	242,878	10,386	96	1,725,059	27,278,838	6
					(Sect 3)	868,734	76,922	91			
Nevada	(NF)	356,501	284,411	80	Total	1,692,437	448,895	73	1,976,848	5,240,232	38
					(Sect 15)	43,406	43,406	100			
					(Sect 3)	1,649,031	448,895	73			
New Mexico	(NFS)	987,790	803,214	81	Total	1,623,907	418,736	74	2,427,121	10,894,662	22
	(NF)	950,010	765,472	81	(Sect 15)	238,180	7,801	97			
	(NG)	37,960	37,742	99	(Sect 3)	1,385,727	410,935	70			
North Dakota	(NFS)	565,843	510,193	90					510,193	16,546,418	3
	(NF)	280	140	50							
	(NG)	565,563	510,053	90							
Oregon	(NFS)	600,817	531,166	88	Total	963,434	62,983	93	1,494,600	12,353,652	12
	(NF)	574,137	505,541	88	(Sect 15)	93,773	4,587	95			
	(NG)	26,680	25,625	96	(Sect 3)	869,658	58,396	93			
South Dakota	(NFS)	458,222	441,063	96					441,063	28,659,294	2
	(NF)	128,989	127,894	99							
	(NG)	329,233	313,169	95							
Utah	(NF)	719,967	658,146	91	(Sect 3)	869,941	353,200	59	1,528,087	7,261,650	21
Washington	(NF)	129,419	116,564	90					116,564	6,215,760	
Wyoming	(NFS)	784,150	682,618	87	Total	1,694,809	441,769	74	2,379,427	14,860,998	16
	(NF)	621,022	521,333	84	(Sect 15)	471,518	6,273	99			
	(NG)	163,128	161,285	99	(Sect 3)	1,223,291	435,496	64			
Total		9,048,719	8,260,691	91	Total	10,504,118	2,423,526	77	18,764,809	181,106,000	10

^{1/} NFS = National Forest System. NF = National Forest. LUP = Land Utilization Projects.

^{2/} Annual Grazing Statistical Use - Summary 1982," USDA - U.S. Forest Service.

^{3/} Public Land Statistics - 1982," MSDI - BLM.

^{4/} 1978 Census of Agriculture, U.S. Department of Commerce. One beef cow equals eighteen AUM's. Five ewes equal one cow.

APPENDIX II. County income, livestock numbers, and livestock dependency on Federal grazing by counties in the Western states*

Arizona

California

Colorado*

Idaho

Montana

Nevada

New Mexico

North Dakota

Oregon

South Dakota

Utah

Washington

Wyoming

Footnotes

*Best estimates available. The information provided on AUM's per county was provided by the USFS and the BLM. The MSFS AUM's do not include the National Grasslands nor the Land Utilization Projects. These county estimates are used for the impact analysis. For North Dakota and South Dakota, for Billings, and Fall River County, most of the federal grazing is on National grasslands, therefore, the land area in relation to National grasslands area are used to estimate the federal AUM's in the area.

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ARIZONA

Livestock Dependency on Federal Grazing by Counties

County	Population ^{1/}	Income Per Capita ^{1/}	Total County Income	No. of Beef Cows ^{2/}	No. of Sheep Equivalents ^{2/3/}	BLM ^{4/} AUM's	Percent ^{2/} Dependent	USFS ^{4/} AUM's	Percent ^{2/} Dependent	Total Federal Grazing	Percent ^{3/} Federal Grazing Dependent	Income to Federal Grazing Ratio	Federal AUM's to Livestock Ratio	County Income to Livestock Ratio
AFACHE	52108.	3338.	173936500.	32053.	15355.	18552.	2.174	46789.	5.483	65341.	7.657	2662.	1.378	3669.
COCHISE	85686.	5738.	491666270.	42523.	53.	28973.	3.781	71055.	9.272	100028.	13.052	4915.	2.349	11548.
COCONINO	75008.	5631.	422370050.	22543.	7260.	39100.	7.289	177213.	33.034	216313.	40.323	1953.	7.258	14172.
GILA	37080.	5511.	204347880.	18254.	6.	6403.	1.948	200440.	60.983	206843.	62.931	988.	11.328	11191.
GRAHAM	22862.	4623.	105691030.	19159.	5.	45664.	13.238	57438.	16.651	103102.	29.889	1025.	5.380	5515.
GREENLEE	11406.	6567.	74903202.	7991.	9.	44293.	30.759	75221.	52.237	119514.	82.996	627.	14.939	9363.
MARICOPA	1509052.	7718.	11646863000.	22840.	7584.	57873.	10.568	77463.	14.145	135336.	24.713	86059.	4.448	382818.
MOHAVE	55865.	6673.	372787150.	0.	0.	272571.	0.000	224.	0.000	272795.	0.000	1367.	0.000	0.
NAVAJO	67629.	4485.	303316070.	26226.	7942.	12869.	2.092	26893.	4.373	39762.	6.465	7628.	1.164	8877.
PIMA	531443.	7149.	3799286000.	0.	54.	22651.	2330.350	55396.	5699.198	78047.	8029.547	48679.	1445.319	70357148.
PINAL	90918.	5326.	484229270.	19518.	1902.	29978.	7.775	26559.	6.888	56537.	14.664	8565.	2.639	22606.
SANTA CRUZ	20459.	5447.	111440170.	13210.	0.	0.	0.000	60819.	25.578	60819.	25.578	1832.	4.604	8436.
YAVAPAI	68145.	6450.	439535250.	34635.	2494.	51385.	7.689	182908.	27.368	234293.	35.057	1876.	6.310	11838.
YUMA	90554.	5681.	514437270.	3425.	2642.	51177.	46.863	0.	0.000	51177.	46.863	10052.	8.435	84793.
TOTALS	2718215.	7043.	19144809112.	262377.	45306.	681489.	12.305	1058419.	19.111	1739908.	31.416	11003.	5.655	62223.

CALIFORNIA

Livestock Dependency on Federal Grazing by Counties

County	Population ^{1/}	Income Per Capita ^{1/}	Total County Income	No. of Beef Cows ^{1/}	No. of Sheep ^{2/} Equivalents	BLN ^{4/} ALN's	Percent ^{2/} Dependent	USFS ^{4/} ALN's	Percent ^{2/} Dependent	Total Federal Grazing	Percent ^{2/} Federal Grazing Dependent	Income to Federal Grazing Ratio	Federal ALN's to Livestock Ratio	County Income to Livestock Ratio
ALAMEDA	1105379.	8537.	9436620500.	12488.	253.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	740650.
ALPINE	1097.	7669.	8412893.	695.	0.	0.	0.000	7766.	62.081	7766.	62.081	1083.	11.175	12105.
AMADOR	19314.	6988.	134966230.	8436.	280.	347.	0.221	1114.	0.710	1461.	0.931	92389.	0.168	15485.
BUTTE	143851.	6708.	964952500.	13767.	1416.	11.	0.004	3103.	1.135	3114.	1.139	309891.	0.205	63555.
CALAVARAS	20710.	7152.	148117920.	16504.	322.	987.	0.506	1656.	0.850	2643.	1.357	56031.	0.244	13682.
COLUSA	12791.	7280.	93118480.	7734.	2580.	208.	0.112	828.	0.446	1036.	0.558	89862.	0.100	9028.
CONTRA COSTA	656380.	9826.	6449589800.	0.	216.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	9859212.
DEL NORTE	10217.	6287.	114530270.	1445.	18.	0.	0.000	3750.	14.238	3750.	14.238	30545.	2.563	78285.
EL DORADO	85812.	7976.	684436510.	1072.	1077.	283.	0.220	6979.	5.423	7262.	5.643	94251.	1.016	95739.
FRESNO	514621.	6982.	3593083800.	23991.	8205.	471.	0.081	20730.	3.577	21201.	3.658	169473.	0.659	111600.
GLEN	21350.	6534.	139500900.	14559.	7049.	25427.	6.613	2391.	0.617	28018.	7.230	4979.	1.301	6480.
HUMBOLDT	108514.	6890.	747661460.	21818.	4203.	2655.	0.567	2929.	0.625	5584.	1.192	133883.	0.215	28733.
IMPERIAL	92110.	5809.	535066990.	5866.	8126.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	38241.
INTO	17875.	6987.	125032360.	10906.	0.	19271.	9.817	11879.	6.051	31150.	15.868	4014.	2.856	11465.
KERN	403089.	6990.	2817592100.	38623.	27560.	55882.	4.691	14158.	1.188	70040.	5.879	40229.	1.058	42573.
KINGS	73738.	5843.	430851130.	5110.	4205.	1695.	1.011	0.	0.000	1695.	1.011	254189.	0.182	46253.
LAKE	36366.	6292.	228814870.	2947.	257.	742.	1.287	3246.	5.628	3988.	6.914	57381.	1.245	71415.
LASSEN	21661.	6406.	138760360.	29046.	355.	153397.	28.986	22105.	4.177	175502.	33.163	791.	5.969	4720.
LOS ANGELES	7477503.	8317.	62190392000.	5748.	3610.	261.	0.155	3193.	1.895	3454.	2.050	18007410.	0.369	6645693.
MADERA	43116.	6361.	401480870.	23940.	1652.	618.	0.134	7140.	1.550	7758.	1.684	51751.	0.303	15688.
MARIN	222568.	12343.	2747156800.	5988.	19464.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	107935.
MARIPOSA	11108.	6676.	74157008.	10953.	69.	6595.	3.324	3233.	1.630	9828.	4.954	7545.	0.892	6728.
MENDOCINO	66738.	6809.	454419040.	14335.	6631.	718.	0.190	2242.	0.594	2960.	0.784	133522.	0.141	21674.
MERCED	134560.	6417.	863471520.	48883.	4677.	1072.	0.111	0.	0.000	1072.	0.111	805477.	0.020	16122.
MODOC	8610.	6563.	56507430.	50636.	2307.	160.	0.017	73034.	7.664	73194.	7.681	772.	1.383	1067.
MONO	8577.	8590.	73676430.	3688.	1891.	20361.	20.275	19888.	19.804	40249.	40.080	1831.	7.214	13206.
MONTEREY	290444.	7496.	2177168200.	28481.	561.	36255.	6.935	7266.	1.390	43521.	8.325	50025.	1.499	74966.
NAPA	99199.	8504.	843588290.	6896.	215.	3040.	2.375	0.	0.000	3040.	2.375	277496.	0.428	118631.
NEVADA	51645.	7505.	387595720.	3731.	501.	436.	0.572	2699.	3.543	3135.	4.115	123638.	0.741	91587.
ORANGE	1932709.	9569.	18494092000.	0.	11.	149.	75.253	1559.	787.152	1708.	862.404	10830713.	155.233	1681281091.
PLACER	117247.	8169.	957790740.	12720.	880.	32.	0.013	5092.	2.080	5124.	2.093	186928.	0.377	70476.
PLUMAS	17340.	6857.	118900380.	7062.	34.	488.	0.382	23017.	18.021	23505.	18.403	5058.	3.312	16756.
RIVERSIDE	663166.	7477.	4958492100.	8344.	6249.	1497.	0.569	4572.	1.738	6069.	2.307	817068.	0.415	339321.
SACRAMENTO	783381.	7950.	6227878900.	20980.	1204.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	280737.
SAN BENITO	25005.	6208.	155231040.	20840.	0.	9269.	2.471	0.	0.000	9269.	2.471	16747.	0.445	7445.
SAN BERNARDINO	895016.	7093.	6348348400.	4308.	3511.	18217.	12.944	5345.	3.798	23562.	16.741	269434.	3.013	811913.
SAN DIEGO	1861846.	7969.	14837050000.	8341.	125.	6814.	4.471	8274.	5.430	15088.	9.901	983352.	1.782	1752545.

CALIFORNIA (Continued)

Livestock Dependency on Federal Grazing by Counties

County	Population ^{1/}	Income Per Capita ^{1/}	Total County Income	No. of Beef Cows ^{2/}	No. of Sheep Equivalents ^{2/}	BLM ^{4/} AUM's	Percent ^{2/} Dependent	USFS ^{4/} AUM's	Percent ^{2/} Dependent	Total Federal Grazing	Percent ^{2/} Federal Grazing Dependent	Income to Federal Grazing Ratio	Federal AUM's to Livestock Ratio	County Income to Livestock Ratio
SAN FRANCISCO	678974.	9267.	6292052000.	0.	0.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	0.
SAN JOAQUIN	347342.	7019.	2437993400.	24905.	7599.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	75006.
SAN LUIS OBISPO	155435.	7048.	1095505800.	36580.	1386.	19224.	2.813	4506.	0.659	23730.	3.472	46165.	0.625	28855.
SAN MATEO	587329.	10668.	6265625700.	3212.	178.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	1848267.
SANTA BARBARA	298694.	8409.	2511717800.	31463.	1132.	134.	0.023	15004.	2.557	15138.	2.580	165919.	0.464	77058.
SANTA CLARA	1295071.	9520.	12329075000.	12579.	90.	310.	0.136	0.	0.000	310.	0.136	39771210.	0.024	973169.
SANTA CRUZ	188141.	8198.	1542379900.	1632.	58.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	912651.
SHASTA	115715.	6791.	785820560.	19640.	429.	54760.	15.159	10975.	3.038	65735.	18.197	11954.	3.275	39156.
SIERRA	3073.	7120.	21879760.	0.	0.	283.	0.000	7042.	0.000	7325.	0.000	2987.	0.000	0.
SISKIYOU	39732.	6535.	259648620.	39198.	1234.	5839.	0.802	28839.	3.963	34678.	4.765	7487.	0.858	6422.
SOLANO	235203.	7407.	1742148600.	8624.	6800.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	112951.
SONOMA	299681.	8094.	2425618000.	14425.	9022.	62.	0.015	0.	0.000	62.	0.015	39122871.	0.003	103451.
STANISLAUS	265900.	7095.	1886560500.	36343.	569.	345.	0.052	0.	0.000	345.	0.052	5468291.	0.009	51110.
SUTTER	52246.	7108.	371364560.	6850.	2860.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	38246.
TEHAMA	38888.	6137.	238655650.	33142.	8841.	2192.	0.290	7952.	1.052	10144.	1.342	23527.	0.242	5685.
TRINITY	11858.	6295.	74646110.	3630.	44.	2095.	3.168	7030.	10.630	9125.	13.798	8181.	2.484	20317.
TULARE	245738.	6040.	1484257500.	30559.	930.	2061.	0.364	32844.	5.795	34905.	6.158	42523.	1.108	47136.
TVOLUNME	33928.	6745.	228844360.	4864.	110.	1725.	1.927	11901.	13.293	13626.	15.220	16794.	2.740	46008.
VENTURA	529174.	8030.	4249267200.	0.	1028.	23.	0.124	13287.	71.804	13310.	71.928	319265.	12.947	4133528.
YOLO	113374.	7277.	825022590.	7331.	3844.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	73828.
YUBA	49733.	5539.	275471080.	9947.	101.	56.	0.031	775.	0.429	831.	0.460	331414.	0.083	27416.
TOTALS	23667902.	8302.	196502060631.	824725.	165989.	456667.	2.561	409344.	2.295	866011.	4.856	226995.	0.874	198344.

COLORADO

Livestock Dependency on Federal Grazing by Counties

County	Population ^{1/}	Income Per Capita ^{1/}	Total County Income	No. of Beef Cows ^{2/}	No. of Sheep Equivalents ^{2/}	BLM ^{4/} AUM's	Percent ^{3/} Dependent	USFS ^{5/} AUM's	Percent ^{3/} Dependent	Total Federal Grazing	Percent ^{3/} Federal Grazing Dependent	Income to Federal Grazing Ratio	Federal AUM's to Livestock Ratio	County Income to Livestock Ratio
ADAMS	245944.	7259.	1785307400.	10839.	182.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	161991.
ALAMOSA	11799.	5694.	67183504.	6758.	1120.	1131.	0.798	1120.	0.790	2251.	1.587	29847.	0.286	8528.
ARAPAHOE	293621.	10192.	2992585200.	5670.	254.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	505163.
ARCHULETA	3644.	5550.	20335200.	4819.	176.	647.	0.720	25998.	28.915	26645.	29.635	763.	5.334	4071.
BACA	5419.	5607.	30384333.	24720.	48.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	1227.
BENT	5945.	5811.	34546395.	16646.	613.	167.	0.054	0.	0.000	167.	0.054	206865.	0.010	2002.
BOULDER	189625.	8608.	1632292000.	5048.	206.	140.	0.148	2303.	2.435	2443.	2.583	668107.	0.465	310676.
CHAFFEE	13227.	6244.	82589388.	3968.	18.	1488.	2.074	5106.	7.117	6594.	9.191	12525.	1.654	20720.
CHEYENNE	2153.	5663.	12192439.	15228.	0.	24.	0.009	0.	0.000	24.	0.009	508018.	0.002	801.
CLEAR CREEK	7308.	9393.	68444044.	0.	0.	49.	0.000	2073.	0.000	2122.	0.000	32354.	0.000	0.
COME JCS	7794.	3285.	25603290.	20673.	5075.	12662.	2.732	12018.	2.593	24680.	5.325	1037.	0.959	994.
COSTILLA	3071.	3680.	11301280.	4727.	751.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	2063.
CROWLEY	2988.	4675.	13968900.	7918.	0.	472.	0.331	0.	0.000	472.	0.331	29595.	0.060	1764.
CUSTER	1528.	5331.	8145768.	3560.	0.	401.	0.401	1852.	1.851	2253.	2.252	3615.	0.405	1465.
DELTA	21225.	5519.	117140770.	16511.	3427.	17153.	4.780	17921.	4.994	35074.	9.773	3340.	1.759	5875.
DENVER	492365.	8556.	4212674900.	0.	0.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	0.
DOLORES	1658.	5381.	8921698.	2849.	0.	4713.	9.190	22079.	43.054	26792.	52.244	333.	9.404	3132.
DOUGLAS	25153.	10522.	264659860.	6033.	54.	0.	0.000	2016.	1.840	2016.	1.840	131311.	0.331	43480.
EAGLE	13320.	9888.	131708160.	8896.	2541.	17075.	8.294	28356.	13.774	45431.	22.068	2899.	3.972	11516.
ELBERT	6850.	6940.	47539000.	21433.	38.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	2214.
EL PASO	309424.	7029.	2174941200.	18625.	59.	44.	0.013	1434.	0.426	1478.	0.440	1471424.	0.079	116407.
FREMONT	28676.	5901.	169217070.	6082.	43.	20914.	18.970	1132.	1.027	22046.	19.997	7676.	3.599	27627.
GARFIELD	22514.	7722.	173853100.	16717.	3486.	64024.	17.606	24768.	6.810	88790.	24.416	1958.	4.395	8605.
GILPIN	2441.	7920.	19332720.	183.	0.	515.	15.634	602.	18.270	1117.	33.904	17311.	6.103	105643.
GRAND	7475.	7768.	58065800.	12353.	279.	16942.	7.451	8682.	3.818	25624.	11.270	2266.	2.029.	4597.
GUNNISON	10689.	6630.	70868070.	23200.	2558.	38985.	8.408	79525.	17.152	118510.	25.561	598.	4.601	2751.
HINSDALE	408.	7806.	3184848.	326.	0.	7111.	121.183	32705.	557.350	39816.	678.532	80.	122.136	9769.
HUERFANO	6440.	5159.	33223960.	12131.	64.	2218.	1.010	1583.	0.721	3801.	1.732	8741.	0.312	2724.
JACKSON	1863.	6864.	12787632.	20852.	60.	25311.	6.724	17199.	4.569	42510.	11.293	301.	2.033	611.
JEFFERSON	371753.	9469.	3520129100.	2951.	13.	0.	0.000	1424.	2.669	1424.	2.669	2472140.	0.480	1187628.
KIOWA	1936.	6452.	12491072.	13040.	212.	290.	0.122	0.	0.000	290.	0.122	43073.	0.022	943.
KIT CARSON	7599.	5950.	45214050.	24473.	228.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	1830.
LAKE	8830.	7733.	68282390.	0.	0.	188.	0.000	1767.	0.000	1955.	0.000	34933.	0.000	0.
LA PLATA	27424.	6728.	184508670.	14175.	1488.	1792.	0.636	24598.	8.725	26390.	9.360	6992.	1.685	11780.

COLORADO (Continued)

Livestock Dependency on Federal Grazing by Counties

County	Population ^{1/}	Income Per Capita ^{1/}	Total County Income	No. of Beef Cows ^{2/}	No. of Sheep ^{2/3/} Equivalents	BLM ^{4/} AUM's	Percent ^{5/} Dependent	USFS ^{6/} AUM's	Percent ^{3/} Dependent	Total Federal Grazing	Percent ^{3/} Federal Grazing Dependent	Income to Federal Grazing Ratio	Federal AUM's to Livestock Ratio	County Income to Livestock Ratio
LARIMER	149184.	7458.	1112614200.	19335.	1137.	3211.	0.871	10349.	2.808	13560.	3.680	82052.	0.662	54348.
LAS ANIMAS	14897.	5110.	76123670.	29718.	55.	336.	0.063	251.	0.047	587.	0.110	129700.	0.020	2557.
LINCOLN	4663.	6357.	29642691.	23353.	22.	397.	0.094	0.	0.000	397.	0.094	74667.	0.017	1268.
LOGAN	19800.	6600.	130680000.	26840.	448.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	4789.
MESA	81530.	7167.	584325510.	25863.	4050.	62911.	11.684	57430.	10.666	120341.	22.350	4856.	4.023	19534.
MINERAL	804.	7104.	5711616.	0.	0.	0.	0.000	24082.	0.000	24082.	0.000	237.	0.000	0.
NOFFAT	13133.	8003.	105103390.	17513.	15585.	175271.	29.420	2156.	0.362	177427.	29.781	592.	5.361	3176.
MONTEZUMA	16510.	5963.	98449130.	15152.	732.	13582.	4.750	15216.	5.322	28798.	10.072	3419.	1.813	6198.
MONTROSE	24352.	6379.	155341400.	21316.	8733.	29286.	5.414	31834.	5.886	61120.	11.300	2547.	2.034	5170.
MORGAN	22513.	6431.	144781100.	22345.	107.	87.	0.022	0.	0.000	87.	0.022	1664151.	0.004	6448.
OTERO	22567.	5123.	115610740.	11844.	200.	275.	0.127	0.	0.000	275.	0.127	420403.	0.023	9583.
OURAY	1925.	6770.	13032250.	8977.	278.	1994.	1.197	12662.	7.601	14656.	8.798	889.	1.584	1408.
PARK	5333.	7095.	37837635.	5211.	0.	4099.	4.370	9219.	9.828	13318.	14.198	2841.	2.556	7261.
PHILLIPS	4542.	6344.	28814448.	4689.	225.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	5864.
PITKIN	10338.	12054.	124614250.	1829.	8.	2878.	8.704	23119.	69.919	25997.	78.623	4793.	14.152	67836.
PROMERS	13070.	5641.	73727870.	21521.	1310.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	3229.
PUEBLO	125972.	6669.	840107260.	16511.	212.	1738.	0.577	371.	0.123	2109.	0.701	398291.	0.126	50237.
RIO BLANCO	6255.	7679.	48032145.	15952.	4335.	117979.	32.308	17524.	4.799	135503.	37.107	354.	6.679	2368.
RIO GRANDE	10511.	5448.	57263928.	9004.	1652.	3519.	1.835	11096.	5.785	14615.	7.619	3918.	1.371	5374.
ROUTT	13404.	8972.	120260680.	13821.	5642.	14568.	4.158	30149.	8.606	44717.	12.764	2689.	2.298	6179.
SAGUACHE	3935.	4504.	17723240.	18998.	810.	23473.	6.583	44248.	12.410	67721.	18.994	262.	3.419	895.
SAN JUAN	833.	6061.	5048813.	0.	0.	2302.	0.000	10194.	0.000	12496.	0.000	404.	0.000	0.
SAN MIGUEL	3192.	6346.	20256432.	4220.	3284.	25605.	18.957	17403.	12.884	43008.	31.841	471.	5.731	2699.
SEDGWICK	3266.	5913.	19311858.	0.	17.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	113592.
SUMMIT	8848.	10152.	89824896.	1037.	0.	101.	0.541	3870.	20.732	3971.	21.273	22621.	3.829	86620.
TELLER	8034.	7052.	56655768.	1771.	0.	1662.	5.214	1793.	5.625	3455.	10.839	16397.	1.951	31991.
WASHINGTON	5304.	5754.	30519216.	24630.	213.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	1228.
WELD	123438.	6505.	802964190.	66705.	5687.	20.	0.002	0.	0.000	20.	0.002	40148209.	0.000	11092.
YUMA	9682.	5958.	57685356.	46049.	274.	8.	0.001	0.	0.000	8.	0.001	7210670.	0.000	1245.
TOTALS	2889964.	7999.	23115886895.	827628.	78009.	719758.	4.415	639226.	3.921	1358984.	8.337	17010.	1.501	25524.

IDAHO

Livestock Dependency on Federal Grazing by Counties

County	Population ^{1/}	Income Per Capita ^{1/}	Total County Income	No. of Beef Cows ^{2/}	No. of Sheep ^{2/3/} Equivalents	BLM ^{4/} AUM's	Percent ^{2/} Dependent	USFS ^{4/} AUM's	Percent ^{2/} Dependent	Total Federal Grazing	Percent ^{2/} Federal Grazing Dependent	Income to Federal Grazing Ratio	Federal AUM's to Livestock Ratio	County Income to Livestock Ratio
ADA	173036.	7749.	1340855900.	14589.	220.	12395.	4.650	80.	0.030	12475.	4.680	107487.	0.842	90543.
ADAMS	3347.	5873.	19656931.	8372.	452.	6929.	4.362	10890.	6.856	17819.	11.218	1103.	2.019	2228.
BAWMOCK	65421.	6692.	437797330.	10150.	1138.	9189.	4.523	10420.	5.129	19609.	9.651	22326.	1.737	38784.
BEAR LAKE	6931.	5442.	37718502.	14431.	1366.	6272.	2.206	17677.	6.217	23949.	8.422	1575.	1.516	2388.
BENEMAH	8292.	6484.	53765328.	2907.	0.	11.	0.021	351.	0.671	362.	0.692	148572.	0.124	18495.
BINGHAM	36489.	5155.	188100790.	30764.	6822.	43565.	6.439	0.	0.000	43565.	6.439	4318.	1.159	5005.
BLAINE	9841.	7992.	78649272.	11891.	6841.	69721.	20.678	26255.	7.787	95976.	28.465	819.	5.124	4199.
BOISE	2999.	6308.	18917692.	2984.	7.	5631.	10.459	16583.	30.802	22214.	41.261	852.	7.427	6325.
BONNER	24163.	5315.	128426340.	6624.	102.	220.	0.182	1624.	1.341	1844.	1.523	69652.	0.274	19094.
BONNEVILLE	65980.	6568.	433356640.	15433.	1344.	4380.	1.450	36889.	12.216	41269.	13.666	10501.	2.460	25830.
BOUNDARY	7289.	4958.	36138862.	3249.	81.	4.	0.007	1612.	2.689	1616.	2.695	22369.	0.485	10853.
BUTTE	3342.	5484.	18327528.	13860.	1646.	48793.	17.482	10661.	3.820	59454.	21.301	308.	3.834	1182.
CANAS	818.	5861.	4794298.	7175.	0.	8459.	6.550	17289.	13.387	25748.	19.937	186.	3.589	668.
CANYON	83756.	5761.	482518310.	22171.	395.	208.	0.051	0.	0.000	208.	0.051	2319800.	0.009	21195.
CARIBOU	8695.	5798.	50413610.	14196.	3651.	9645.	3.002	34113.	10.619	43758.	13.621	1152.	2.452	2825.
CASSIA	19427.	5245.	101894610.	30262.	2998.	53381.	8.916	21098.	3.524	74479.	12.440	1368.	2.239	3064.
CLARK	798.	4591.	3663618.	8650.	3616.	53377.	24.176	18066.	8.183	71443.	32.358	51.	5.824	299.
CLEARWATER	10390.	6612.	68698680.	2983.	0.	121.	0.225	1022.	1.903	1143.	2.129	60102.	0.383	23030.
CUSTER	3385.	5237.	17727245.	24728.	1127.	51637.	11.095	82449.	17.716	134086.	28.811	132.	5.186	686.
ELMORE	21565.	5324.	114812060.	20246.	1962.	83961.	21.004	19908.	4.980	103869.	25.984	1105.	4.677	5170.
FRANKLIN	8895.	4771.	42438045.	4809.	290.	2094.	2.281	8527.	9.291	10621.	11.572	3996.	2.083	8323.
FREMONT	10813.	4724.	51080612.	9720.	2245.	20223.	9.390	26540.	12.323	46763.	21.713	1092.	3.908	4269.
GEN	11972.	5801.	69449572.	13055.	255.	14191.	5.923	1149.	0.479	15340.	6.403	4527.	1.152	5218.
GOODING	11874.	5353.	63561522.	21621.	5830.	31620.	6.399	0.	0.000	31620.	6.399	2010.	1.152	2315.
IDAHO	14769.	5873.	86738337.	24937.	1583.	4174.	0.874	48001.	10.056	52175.	10.930	1662.	1.967	3271.
JEFFERSON	15304.	4577.	70046408.	21686.	2196.	25582.	5.951	0.	0.000	25582.	5.951	2738.	1.071	2933.
JEROME	14840.	5638.	83667920.	12624.	1507.	31693.	12.460	0.	0.000	31693.	12.460	2640.	2.243	5921.
KOOTENAI	59770.	6346.	379300420.	5102.	40.	167.	0.180	192.	0.207	359.	0.388	1057254.	0.070	73765.
LATAH	28749.	6441.	185172300.	6468.	80.	38.	0.032	965.	0.819	1003.	0.851	184633.	0.153	28279.
LENHI	7460.	5565.	41514900.	31538.	1112.	72375.	12.315	50969.	8.673	123344.	20.988	337.	3.778	1272.
LEWIS	4118.	5782.	23810276.	4699.	0.	386.	0.456	0.	0.000	386.	0.456	61685.	0.082	5067.
LINCOLN	3436.	4853.	16674908.	9783.	521.	73484.	39.620	0.	0.000	73484.	39.620	227.	7.132	1618.
MADISON	19480.	4098.	79829040.	7517.	16.	1607.	1.185	2091.	1.542	3698.	2.727	21587.	0.491	10597.
MINIDOKA	19718.	5368.	105846220.	5559.	6135.	28011.	13.307	0.	0.000	28011.	13.307	3779.	2.395	9051.
NEZ PERCE	33220.	6990.	232207800.	11547.	46.	1038.	0.497	0.	0.000	1038.	0.497	223707.	0.090	20030.

IDAHO (Continued)

Livestock Dependency on Federal Grazing by Counties

County	Population ^{1/}	Income Per Capita ^{1/}	Total County Income	No. of Beef Cows ^{2/}	No. of Sheep ^{2/3/} Equivalents	BLM ^{4/} AUM's	Percent ^{2/} Dependent	USFS ^{4/} AUM's	Percent ^{2/} Dependent	Total Federal Grazing	Percent ^{2/} Federal Grazing Dependent	Income to Federal Grazing Ratio	Federal AUM's to Livestock Ratio	County Income to Livestock Ratio
ONEIDA	3258.	4353.	14182074.	15626.	588.	66543.	22.800	7848.	2.689	74391.	25.489	191.	4.588	875.
OWYHEE	8272.	4377.	36206544.	43577.	1587.	372322.	45.799	0.	0.000	372322.	45.799	97.	8.244	802.
PAYETTE	15722.	5074.	79773428.	8381.	511.	8469.	5.291	0.	0.000	8469.	5.291	9419.	0.952	8971.
POWER	6844.	5971.	40865524.	9489.	200.	11769.	6.748	2158.	1.238	13927.	7.986	2934.	1.437	4218.
SHOSHONE	19226.	6531.	125565000.	303.	0.	68.	1.247	6183.	113.371	6251.	114.618	20086.	20.631	414406.
TETON	2897.	4297.	12448409.	5781.	412.	1479.	1.327	4455.	3.997	5934.	5.324	2098.	0.958	2010.
TWIN FALLS	52927.	6405.	338997430.	42887.	3371.	92944.	11.163	4980.	0.598	97924.	11.761	3462.	2.117	7328.
VALLEY	5604.	6615.	37070460.	5030.	16.	326.	0.359	41181.	45.340	41507.	45.699	893.	8.226	7347.
WASHINGTON	8803.	5112.	45000936.	18455.	2502.	35898.	9.516	2795.	0.741	38693.	10.257	1163.	1.846	2147.
TOTALS	943935.	6248.	5897681631.	605859.	65011.	1364400.	11.299	535021.	4.431	1899421.	15.729	3105.	2.831	8791.

MONTANA

Livestock Dependency on Federal Grazing by Counties

County	Population ^{1/}	Income Per Capita ^{1/}	Total County Income	No. of Beef Cows ^{2/}	No. of Sheep ^{2/3/} Equivalents	BLN ^{4/} AUM's	Percent ^{3/} Dependent	USFB ^{4/} AUM's	Percent ^{3/} Dependent	Total Federal Grazing	Percent ^{2/} Federal Grazing Dependent	Income to Federal Grazing Ratio	Federal AUM's to Livestock Ratio	County Income to Livestock Ratio
BEAVERHEAD	8184.	5949.	48698514.	84962.	3591.	86472.	5.425	89287.	5.602	175759.	11.027	277.	1.985	550.
BIGHORN	11096.	4857.	53893272.	52286.	572.	4752.	0.499	0.	0.000	4752.	0.499	11341.	0.090	1020.
BLAINE	6999.	5035.	35239965.	45217.	837.	73191.	8.829	0.	0.000	73191.	8.829	481.	1.589	765.
BROADWATER	3267.	5593.	18272331.	15147.	197.	8068.	2.921	4312.	2.285	14380.	5.206	1271.	0.937	1191.
CARBON	8099.	5728.	46391072.	29359.	2292.	14672.	2.575	38219.	6.708	52891.	9.284	877.	1.671	1466.
CARTER	1799.	5102.	9178498.	34654.	10885.	93450.	11.400	11787.	1.438	105237.	12.838	87.	2.311	202.
CASCADE	80696.	6959.	561563460.	44281.	1301.	2032.	0.248	4806.	0.586	6838.	0.833	82121.	0.150	12320.
CHOUTEAU	6092.	7524.	45836208.	30115.	206.	14314.	2.623	824.	0.151	15138.	2.774	3028.	0.499	1512.
CLUSTER	13109.	6514.	85392026.	45256.	1391.	68344.	8.140	0.	0.000	68344.	8.140	1249.	1.465	1831.
DANIELS	2835.	6006.	17027010.	11473.	563.	20.	0.009	0.	0.000	20.	0.009	851351.	0.002	1415.
DAWSON	11805.	6449.	78491445.	23785.	455.	12187.	2.793	0.	0.000	12187.	2.793	6441.	0.503	3238.
DEER LODGE	12518.	6220.	77861960.	8999.	0.	308.	0.190	9821.	6.063	10129.	6.253	7687.	1.126	8652.
FALLON	3763.	6589.	24794407.	23020.	488.	29527.	6.978	0.	0.000	29527.	6.978	840.	1.256	1055.
FERGUS	13076.	5639.	73735564.	62624.	1846.	56763.	4.891	2548.	0.220	59311.	5.111	1243.	0.920	1144.
FLATHEAD	51966.	6695.	347912370.	13664.	180.	0.	0.000	2144.	0.860	2144.	0.860	162270.	0.155	25131.
GALLATIN	42865.	6459.	276865030.	36948.	1271.	1155.	0.168	9645.	1.402	10800.	1.570	25635.	0.283	7244.
GARFIELD	1656.	5499.	9106344.	34516.	6797.	92687.	12.464	0.	0.000	92687.	12.464	98.	2.244	220.
GLACIER	10620.	5362.	56987336.	21985.	0.	277.	0.070	769.	0.194	1046.	0.264	54477.	0.048	2592.
GOLDEN VALLEY	1026.	4475.	4591350.	11239.	1012.	162.	0.073	636.	0.289	798.	0.362	5750.	0.065	375.
GRANITE	2700.	5845.	15781500.	19740.	104.	3098.	0.867	18672.	5.227	21770.	6.095	725.	1.097	795.
HILL	17985.	6972.	125391420.	18601.	171.	1717.	0.508	0.	0.000	1717.	0.508	73029.	0.091	6680.
JEFFERSON	7029.	6324.	44451396.	15981.	181.	9205.	3.164	18142.	6.236	27347.	9.400	1625.	1.692	2750.
JUDITH BASIN	2646.	5870.	15532020.	29363.	760.	1324.	0.244	7983.	1.472	9307.	1.716	1669.	0.309	516.
LAKE	19056.	5410.	103092960.	30874.	482.	0.	0.000	167.	0.030	167.	0.030	616290.	0.005	3288.
LEWIS AND CLARK	43039.	7264.	312635290.	24863.	1510.	6162.	1.298	27046.	5.697	33208.	6.995	9414.	1.259	11854.
LIBERTY	2329.	6897.	16063113.	8513.	0.	3006.	1.962	0.	0.000	3006.	1.962	5344.	0.353	1887.
LINCOLN	17752.	5761.	102269270.	4009.	0.	0.	0.000	8321.	11.531	8321.	11.531	12290.	2.076	25510.
MC CONE	2702.	4746.	12823692.	21265.	2590.	38989.	9.080	0.	0.000	38989.	9.080	329.	1.634	538.
MADISON	5448.	5585.	30427080.	56932.	2255.	30600.	2.872	44486.	4.176	75086.	7.048	405.	1.269	514.
MEAGHER	2154.	5854.	12609516.	27969.	773.	2037.	0.394	12887.	2.491	14924.	2.885	845.	0.519	439.
MINERAL	3675.	5953.	21877275.	790.	14.	0.	0.000	1838.	12.701	1838.	12.701	11903.	2.286	27211.
MISSOULA	76016.	7256.	551572090.	0.	123.	103705.	4684.056	1650.	74.542	105355.	4758.598	5235.	856.548	4484326.
MUSSELSHELL	4428.	5347.	23676516.	16389.	1722.	26802.	8.222	0.	0.000	26802.	8.222	883.	1.480	1307.
PARK	12660.	6607.	83644620.	34316.	571.	1598.	0.254	16695.	2.659	18293.	2.913	4572.	0.524	2398.
PETROLEUM	653.	5502.	3603810.	14914.	832.	68226.	24.072	0.	0.000	68226.	24.072	53.	4.333	229.
PHILLIPS	5367.	5159.	27688353.	47479.	1485.	181804.	20.628	0.	0.000	181804.	20.628	152.	3.713	565.

MONTANA (Continued)

Livestock Dependency on Federal Grazing by Counties

County	Population ^{1/}	Income Per Capita ^{1/}	Total County Income	No. of Beef Cows ^{2/}	No. of Sheep ^{2/3/} Equivalents	BLM ^{4/} AUM's	Percent ^{2/} Dependent	USFS ^{4/} AUM's	Percent ^{2/} Dependent	Total Federal Grazing	Percent ^{3/} Federal Grazing Dependent	Income to Federal Grazing Ratio	Federal AUM's to Livestock Ratio	County Income to Livestock Ratio
FONDERA	6731.	6661.	44835191.	16465.	471.	156.	0.051	2862.	0.939	3018.	0.990	14855.	0.178	2647.
POWDER RIVER	2520.	4523.	16437960.	40289.	2463.	60398.	7.849	44870.	5.831	105268.	13.679	156.	2.462	384.
POWELL	6958.	5662.	39396196.	26539.	402.	2541.	0.524	9441.	1.947	11982.	2.471	3288.	0.445	1462.
PRAIRIE	1836.	4288.	7872768.	19058.	499.	108584.	30.845	0.	0.000	108584.	30.845	73.	5.552	403.
RAVALLI	22493.	5678.	12715250.	22265.	1273.	0.	0.000	5961.	1.407	5961.	1.407	2133.	0.253	540.
RICHLAND	12243.	6897.	84439971.	24937.	1974.	13698.	2.828	0.	0.000	13698.	2.828	6164.	0.509	3138.
ROOSEVELT	10467.	5741.	60091047.	20748.	447.	1216.	0.319	0.	0.000	1216.	0.319	49417.	0.057	2835.
ROSEBUD	9899.	6180.	61175820.	41348.	1821.	34640.	4.458	12640.	1.627	47280.	6.085	1294.	1.095	1417.
SANDERS	8675.	5522.	47903350.	15194.	66.	0.	0.000	2801.	1.020	2801.	1.020	17103.	0.184	3139.
SHERIDAN	5414.	6779.	36701506.	14853.	168.	60.	0.022	0.	0.000	60.	0.022	611692.	0.004	2443.
SILVER BOW	38092.	6547.	249388320.	0.	14.	2133.	846.429	8776.	3482.571	10909.	4329.000	22861.	779.220	17813451.
STILLWATER	5598.	5582.	31248036.	27240.	1775.	905.	0.173	24576.	4.706	25481.	4.879	1226.	0.878	1077.
SWEET GRASS	3216.	5689.	18295824.	25197.	2904.	2757.	0.545	14043.	2.776	16800.	3.321	1089.	0.598	651.
TETON	6491.	6070.	39400370.	30679.	1358.	1346.	0.233	6308.	1.094	7654.	1.327	5148.	0.239	1230.
TOOLE	5559.	6659.	37017381.	0.	392.	4588.	65.023	0.	0.000	4588.	65.023	8068.	11.704	94432.
TREASURE	981.	5307.	5206167.	13445.	0.	1877.	0.776	0.	0.000	1877.	0.776	2774.	0.140	387.
VALLEY	10250.	6187.	63416750.	44623.	519.	145272.	17.878	0.	0.000	145272.	17.878	437.	3.218	1405.
WHEATLAND	2359.	5636.	13295324.	20851.	2530.	477.	0.113	1377.	0.327	1854.	0.441	7171.	0.079	569.
WIBAUX	1476.	4908.	7244208.	11399.	286.	4635.	2.204	0.	0.000	4635.	2.204	1563.	0.397	620.
YELLOWSTONE	108035.	7600.	821066000.	30976.	1038.	13004.	2.257	0.	0.000	13004.	2.257	63139.	0.406	25647.
YELLOWSTONE NAT PK	275.	6708.	1844700.	0.	0.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	0.
TOTALS	786690.	6450.	5073970222.	1447634.	67857.	1434941.	5.260	468341.	1.717	1903282.	6.977	2666.	1.256	3348.

NEVADA

Livestock Dependency on Federal Grazing by Counties

County	Population ^{1/}	Income Per Capita ^{1/}	Total County Income	No. of Beef Cows ^{2/}	No. of Sheep Equivalents ^{2/3/}	BLM ^{4/} AUM's	Percent ^{3/} Dependent	USFS ^{4/} AUM's	Percent ^{3/} Dependent	Total Federal Grazing	Percent ^{3/} Federal Grazing Dependent	Income to Federal Grazing Ratio	Federal AUM's to Livestock Ratio	County Income to Livestock Ratio
CHURCHILL	13917.	6447.	89722899.	14439.	222.	75950.	28.780	0.	0.000	75950.	28.780	1181.	5.180	6120.
CLARK	463087.	8259.	3824635500.	2247.	24.	1336.	3.268	1226.	2.999	2562.	6.268	1492809.	1.128	1684120.
DOUGLAS	19421.	10737.	208523270.	8302.	736.	13968.	8.586	1279.	0.786	15247.	9.372	13676.	1.687	23072.
ELKO	17269.	7263.	125424740.	94625.	4327.	674823.	37.887	78801.	4.424	753624.	42.311	166.	7.616	1268.
ESMERALDA	777.	7410.	5757570.	0.	0.	43650.	0.000	667.	0.000	44317.	0.000	130.	0.000	0.
EUREKA	1198.	5313.	6963974.	16921.	1952.	130914.	38.537	3046.	0.897	133960.	39.433	52.	7.098	369.
HUMBOLDT	9434.	6876.	64868184.	33668.	1120.	233993.	37.368	20212.	3.228	254205.	40.596	253.	7.307	1865.
LANDER	4076.	7254.	29567304.	13932.	0.	222422.	88.693	6257.	2.495	228679.	91.188	129.	16.414	2122.
LINCOLN	3732.	5582.	20832024.	7582.	0.	232496.	170.357	2309.	1.692	234805.	172.049	89.	30.969	2748.
LYON	13594.	7061.	95987234.	20463.	2175.	41782.	10.254	3780.	0.928	45562.	11.181	2107.	2.013	4240.
MINERAL	6217.	6153.	38253201.	0.	0.	35701.	0.000	5688.	0.000	41389.	0.000	924.	0.000	0.
MYE	9048.	7169.	64865112.	16497.	0.	237373.	79.938	50419.	16.979	287792.	96.917	225.	17.445	3932.
PERSHING	3408.	6591.	22462128.	12824.	1627.	94632.	36.380	0.	0.000	94632.	36.380	237.	6.548	1554.
STOREY	1503.	8167.	12275001.	0.	0.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	0.
WASHOE	193623.	9491.	1837675800.	17861.	113.	60087.	18.572	1185.	0.366	61272.	18.939	29992.	3.409	102241.
WHITE PINE	8167.	7079.	57814193.	15281.	3550.	300659.	88.701	70294.	20.738	370953.	109.439	156.	19.699	3070.
CARSON CITY	32022.	8148.	260915250.	636.	0.	0.	0.000	184.	1.604	184.	1.604	1421107.	0.289	410244.
TOTALS	800493.	8453.	6766543384.	275278.	15846.	2399786.	45.795	245347.	4.682	2645133.	50.477	2558.	9.086	23243.

NEW MEXICO

Livestock Dependency on Federal Grazing by Counties

County	Population ^{1/}	Income Per Capita ^{1/}	Total County Income	No. of Beef ^{2/} Cows ^{2/}	No. of Sheep Equivalents ^{2/3/}	BLM ^{2/} AUM's ^{2/}	Percent ^{2/} Dependent	USFS ^{2/} AUM's ^{2/}	Percent ^{2/} Dependent	Total Federal Grazing	Percent ^{2/} Federal Grazing Dependent	Income to Federal Grazing Ratio	Federal AUM's to Livestock Ratio	County Income to Livestock Ratio
BERNALILLO	419700.	7136.	2994979200.	5823.	0.	1971.	1.880	4790.	4.570	6761.	6.450	442984.	1.161	514336.
CATRON	2720.	4695.	12770400.	18509.	8.	96339.	28.904	165063.	49.523	261402.	78.427	49.	14.117	690.
CHAVES	51103.	5828.	297828280.	40092.	15905.	240332.	23.844	3960.	0.393	244292.	24.237	1219.	4.363	5319.
COLFAX	13667.	3515.	75373505.	22610.	105.	10.	0.002	3495.	0.855	3505.	0.857	21508.	0.154	3318.
CURRY	42019.	5978.	251189580.	13381.	388.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	18243.
DE BACA	2454.	5187.	12728898.	16188.	673.	9265.	3.053	0.	0.000	9265.	3.053	1374.	0.549	755.
DONA ANA	96340.	5284.	509060560.	8948.	178.	111020.	67.585	0.	0.000	111020.	67.585	4585.	12.165	55781.
EDDY	47855.	6057.	289857730.	16693.	4816.	250546.	64.713	13254.	3.423	263800.	68.137	1099.	12.265	13476.
GRANT	26204.	5703.	149441410.	21342.	7.	41151.	10.709	56894.	14.805	98045.	25.514	1524.	4.592	7000.
GUADALUPE	4496.	3850.	17309600.	18290.	4388.	12102.	2.965	0.	0.000	12102.	2.965	1430.	0.534	763.
HARDING	1090.	5267.	5741030.	17384.	81.	49.	0.016	0.	0.000	49.	0.016	117164.	0.003	329.
HIDALGO	6049.	5242.	31708858.	23348.	90.	135070.	32.016	10488.	2.486	145558.	34.502	218.	6.210	1353.
LEA	55993.	6921.	387527550.	31817.	1282.	64564.	10.837	0.	0.000	64564.	10.837	6002.	1.951	11708.
LINCOLN	10997.	4388.	70248836.	21710.	11451.	111041.	18.603	37920.	6.353	148961.	24.956	472.	4.492	2118.
LOS ALAMOS	17599.	10442.	183768750.	0.	0.	0.	0.000	1200.	0.000	1200.	0.000	153202.	0.000	0.
LUNA	15585.	4790.	74652150.	14028.	0.	100569.	39.829	0.	0.000	100569.	39.829	742.	7.169	5322.
MC KIMLEY	56449.	4196.	236860000.	18876.	9538.	33523.	6.554	11901.	2.327	45424.	8.881	5214.	1.599	8336.
MORA	4205.	3404.	14313820.	8877.	99.	1625.	1.006	4135.	2.559	5760.	3.565	2485.	0.642	1595.
OTERO	44665.	5379.	240253030.	19866.	2794.	147070.	36.057	55333.	13.566	202403.	49.623	1187.	8.932	10603.
QUAY	10577.	5561.	58818497.	27740.	208.	30.	0.006	0.	0.000	30.	0.006	1960623.	0.001	2105.
RIO ARRIBA	29282.	3937.	115283230.	22356.	1841.	64041.	14.704	65064.	14.938	129105.	29.642	893.	5.336	4764.
ROOSEVELT	15695.	5180.	81300100.	20740.	162.	946.	0.251	0.	0.000	946.	0.251	85941.	0.045	3890.
SAMDOVAL	34799.	5123.	178275270.	0.	156.	68823.	2450.962	16938.	603.209	85761.	3054.171	2079.	549.751	1142790.
SAN JUAN	81433.	5814.	473451460.	7635.	6807.	85990.	33.079	0.	0.000	85990.	33.079	5506.	5.954	32783.
SAN MIGUEL	22751.	3904.	88819904.	22285.	53.	6723.	1.672	13523.	3.363	20246.	5.035	4387.	0.906	3976.
SANTA FE	75360.	6855.	516592800.	7330.	72.	12386.	9.296	9953.	7.470	22339.	16.767	23125.	3.018	69791.
SIERRA	8454.	4637.	39201198.	0.	21.	94305.	24948.413	24676.	6528.000	118981.	31476.413	329.	5665.754	1866724.
SOCORRO	12566.	4469.	56157454.	23834.	535.	126217.	28.774	38756.	8.835	164973.	37.610	340.	6.770	2304.
TAOS	19456.	4613.	89750528.	4624.	629.	23753.	25.121	26057.	27.558	49810.	52.679	1802.	9.482	17086.
TORRANCE	7491.	4691.	35140281.	18518.	1548.	7269.	2.013	9633.	2.667	16902.	4.680	2079.	0.842	1751.
UNION	4725.	5957.	28146825.	26907.	172.	30.	0.006	0.	0.000	30.	0.006	938228.	0.001	1039.
VALENCIA	61115.	5850.	357522750.	19460.	2041.	52813.	13.646	991.	0.256	53804.	13.902	6645.	2.502	16628.

TOTALS 1302894. 6120. 7974073684. 539211. 66048. 1899573. 17.436 574021. 5.269 2473594. 22.705 3224. 4.087 13175.

NORTH DAKOTA

Livestock Dependency on Federal Grazing by Counties

County	Population ^{1/}	Income Per Capita ^{1/}	Total County Income	No. of Beef Cows ^{2/}	No. of Sheep Equivalents ^{2/}	BLN ^{4/} AUM's	Percent ^{3/} Dependent	USFWS ^{5/} AUM's	Percent ^{3/} Dependent	Total Federal Grazing	Percent ^{3/} Federal Grazing Dependent	Income to Federal Grazing Ratio	Federal AUM's to Livestock Ratio	County Income to Livestock Ratio
ADAMS	3584.	5864.	21016578.	15725.	742.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	1276.
BARNES	13960.	6220.	86831200.	15324.	568.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	5464.
BENSON	7944.	4958.	39386352.	14839.	322.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	2598.
BILLINGS	1138.	8116.	9236008.	17464.	0.	183.	0.058	0.	0.000	183.	0.058	50470.	0.010	329.
BOTTINEAU	9239.	5765.	53262835.	11637.	219.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	4492.
BOWMAN	4229.	6195.	26198655.	19182.	2368.	5683.	1.465	0.	0.000	5683.	1.465	4610.	0.264	1216.
BURKE	3822.	5351.	20451522.	7586.	297.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	2594.
BURLEIGH	54811.	7767.	425717040.	30903.	420.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	13591.
CASS	88247.	7687.	678354690.	9314.	963.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	66007.
CAVALIER	7636.	6107.	46633052.	4852.	182.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	9264.
DICKEY	7207.	5243.	37786301.	24510.	1157.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	1472.
DIVIDE	3494.	6235.	21785090.	8442.	267.	10.	0.006	0.	0.000	10.	0.006	2178509.	0.001	2501.
DUMM	4627.	5650.	26142550.	46776.	202.	2371.	0.280	0.	0.000	2371.	0.280	11026.	0.050	356.
EDDY	3534.	5830.	20719820.	11109.	791.	16.	0.007	0.	0.000	16.	0.007	1294989.	0.001	1741.
ENMONS	5877.	4692.	27574884.	28726.	139.	24.	0.005	0.	0.000	24.	0.005	1148954.	0.001	953.
FOSTER	4611.	6357.	29312127.	10308.	351.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	2750.
GOLDEN VALLEY	2391.	6239.	14917449.	13283.	542.	524.	0.211	0.	0.000	524.	0.211	28468.	0.038	1079.
GRAND FORKS	46100.	6519.	430905900.	7487.	219.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	55918.
GRANT	4274.	4262.	18215788.	30816.	1253.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	568.
GRIGGS	3714.	5782.	21474348.	8669.	245.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	2409.
HETTINGER	4275.	5104.	21819600.	11924.	126.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	1811.
KIDDER	3833.	4543.	17413319.	31418.	948.	10.	0.002	0.	0.000	10.	0.002	1741332.	0.000	538.
LA MOURE	6473.	5218.	33776114.	15400.	618.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	2083.
LOGAN	3493.	4639.	16204027.	21110.	199.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	760.
MC HENRY	7858.	4949.	38889242.	32108.	567.	559.	0.095	0.	0.000	559.	0.095	69569.	0.017	1190.
MC INTOSH	4800.	5145.	24696000.	17490.	342.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	1385.
MC KENZIE	7132.	6142.	43804744.	39973.	2024.	49.	0.006	0.	0.000	49.	0.006	893974.	0.001	1043.
MC LEAN	12383.	6068.	75140044.	20830.	229.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	3568.
MERCER	9404.	7071.	66495684.	20211.	123.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	3270.
MORTON	25177.	6249.	157331070.	46499.	569.	35.	0.004	0.	0.000	35.	0.004	4495173.	0.001	3343.
MOUNTRAIL	7679.	5476.	42050204.	21738.	314.	107.	0.027	0.	0.000	107.	0.027	392993.	0.005	1907.
NELSON	5233.	5529.	28933257.	8033.	294.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	3475.
OLIVER	2495.	5984.	14930080.	15260.	315.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	959.
PENBINA	10399.	6110.	63537890.	5039.	200.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	12128.
PIERCE	6166.	5279.	32550314.	10945.	232.	13.	0.006	0.	0.000	13.	0.006	2503870.	0.001	2912.
RAMSEY	13048.	6347.	82815656.	4363.	140.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	18391.
RAMSOM	6698.	5636.	37749928.	14864.	670.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	2430.

NORTH DAKOTA (Continued)

Livestock Dependency on Federal Grazing by Counties

County	Population ^{1/}	Income Per Capita ^{1/}	Total County Income	No. of Beef Cows ^{2/}	No. of Sheep Equivalent ^{2/}	BLU ^{4/} AUM's	Percent ^{2/} Dependent	USFS ^{4/} AUM's	Percent ^{2/} Dependent	Total Federal Grazing	Percent ^{2/} Federal Grazing Dependent	Income to Federal Grazing Ratio	Federal AUM's to Livestock Ratio	County Income to Livestock Ratio
REMUEILLE	3608.	5730.	20673840.	4747.	0.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	4355.
RICHLAND	19207.	6267.	120370270.	16378.	205.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	7259.
ROLETTE	12177.	4147.	50498019.	11246.	207.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	4409.
SARGENT	5512.	5761.	31754632.	16941.	443.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	1827.
SHERIDAN	2819.	4936.	13914584.	13840.	91.	13.	0.005	0.	0.000	13.	0.005	1070353.	0.001	999.
SIOUX	3620.	3642.	13184040.	17083.	102.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	767.
SLOPE	1157.	3476.	4021732.	17388.	388.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	226.
STARK	23697.	6442.	152656070.	23336.	538.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	6394.
STEELE	3106.	6919.	21490414.	2739.	285.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	7107.
STUTSMAN	24154.	6498.	156952690.	36271.	1036.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	4207.
TOWNER	4052.	6212.	25171024.	2895.	297.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	7886.
TRAILL	9624.	6508.	62632992.	2695.	116.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	22281.
WALSH	15371.	5211.	80098281.	7897.	154.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	9949.
WARD	58392.	6389.	373066490.	16253.	454.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	22330.
WELLS	6979.	5520.	38524080.	11941.	592.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	3074.
WILLIAMS	22237.	7565.	168222910.	18990.	181.	121.	0.035	0.	0.000	121.	0.035	1390272.	0.006	8775.
TOTALS	652717.	6415.	4187291430.	894999.	24246.	9718.	0.059	0.	0.000	9718.	0.059	430880.	0.011	4555.

OREGON

Livestock Dependency on Federal Grazing by Counties

County	Population ^{1/}	Income Per Capita ^{1/}	Total County Income	No. of Beef Cows ^{2/}	No. of Sheep Equivalent ^{2/}	BLM ^{4/} AUM's	Percent ^{2/} Dependent	USFS ^{4/} AUM's	Percent ^{2/} Dependent	Total Federal Grazing	Percent ^{2/} Federal Grazing Dependent	Income to Federal Grazing Ratio	Federal AUM's to Livestock Ratio	County Income to Livestock Ratio
BAKER	16134.	6196.	99946264.	44940.	750.	49706.	6.044	23356.	2.840	73062.	8.084	1368.	1.599	2188.
BENTON	48211.	7162.	488527180.	3909.	1216.	7.	0.008	39.	0.042	46.	0.050	10473856.	0.009	95322.
CLACKAMAS	241919.	8600.	2080503400.	12395.	2443.	0.	0.000	3558.	1.332	3558.	1.332	584779.	0.240	140215.
CLATSOP	32489.	7555.	245454400.	2766.	38.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	87537.
COLUMBIA	35446.	7281.	259538530.	5384.	648.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	43027.
COOS	44047.	6930.	443845710.	1852.	3842.	6.	0.003	110.	0.048	116.	0.051	3820986.	0.009	34965.
CROOK	13091.	6961.	91126451.	25660.	334.	25029.	5.349	20025.	4.280	45054.	9.629	2023.	1.733	3506.
CURRY	16992.	7180.	122138500.	4332.	3078.	0.	0.000	1026.	0.769	1026.	0.769	119029.	0.138	16483.
DESCHUTES	62142.	7290.	453015180.	7008.	500.	33103.	24.495	9759.	7.221	42862.	31.716	10569.	5.709	60338.
DOUGLAS	93748.	6680.	626236640.	24191.	10855.	1276.	0.202	7407.	1.174	8683.	1.376	72120.	0.248	17869.
GILLIAM	2057.	7007.	14413399.	11094.	189.	3742.	1.842	0.	0.000	3742.	1.842	3852.	0.332	1277.
GRANT	8210.	6378.	52363380.	30341.	259.	24296.	4.411	76947.	13.970	101243.	18.381	517.	3.309	1711.
HARNEY	8314.	6922.	57549508.	57796.	95.	325299.	31.218	26855.	2.577	352154.	33.795	163.	6.083	994.
HOOD RIVER	15835.	7521.	119095040.	672.	33.	10.	0.079	1485.	11.703	1495.	11.782	79656.	2.121	168929.
JACKSON	132456.	6946.	920039380.	18817.	509.	20061.	5.767	7552.	2.171	27613.	7.938	33319.	1.479	47606.
JEFFERSON	11599.	6091.	70649509.	8502.	455.	1825.	1.132	1630.	1.011	3455.	2.143	20449.	0.386	7888.
JOSEPHINE	58855.	5875.	345773130.	2783.	99.	439.	0.846	808.	1.557	1247.	2.404	277320.	0.433	119977.
KLAMATH	59117.	6561.	387866640.	44836.	2540.	15360.	1.801	27807.	3.261	43167.	5.062	8985.	0.911	8187.
LAKE	7532.	6287.	47353684.	52251.	444.	129471.	13.650	34937.	3.683	164408.	17.333	288.	3.120	899.
LANE	275226.	7302.	2009700300.	14286.	2597.	758.	0.249	1583.	0.521	2341.	0.770	858465.	0.139	119037.
LINCOLN	35244.	7575.	267124800.	2675.	463.	27.	0.048	398.	0.704	425.	0.752	628825.	0.135	85126.
LINN	89495.	6443.	594515290.	12330.	5277.	0.	0.000	71.	0.023	71.	0.023	8326545.	0.004	33766.
MALHEUR	26896.	5478.	147336290.	75137.	1895.	413010.	29.786	143.	0.010	413153.	29.797	357.	5.363	1913.
MARION	204692.	7080.	1449219400.	7642.	2003.	0.	0.000	500.	0.288	500.	0.288	2899599.	0.052	150256.
MORROW	7519.	7148.	53745812.	20549.	4233.	161.	0.036	3907.	0.876	4068.	0.912	13213.	0.164	2169.
MULTNOMAH	562640.	8134.	4576513800.	1818.	181.	0.	0.000	504.	1.400	504.	1.400	9082547.	0.252	2289402.
OLK	45203.	6994.	316149780.	4605.	2227.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	46275.
SHERMAN	2172.	6232.	13535904.	4357.	24.	2421.	3.070	0.	0.000	2421.	3.070	3591.	0.553	3090.
TILLAMOOK	21164.	7016.	148486620.	1934.	0.	0.	0.000	214.	0.615	214.	0.615	693215.	0.111	76777.
UMATILLA	58861.	6451.	391484510.	37152.	0.	1253.	0.187	11155.	1.668	12408.	1.855	31552.	0.334	10537.
UNION	23921.	6416.	153477140.	15487.	433.	363.	0.127	20957.	7.313	21320.	7.440	7199.	1.339	9641.
WALLOWA	7273.	6277.	45652621.	28660.	1719.	2153.	0.394	89842.	16.430	91995.	16.824	496.	3.028	1503.
WASCO	21732.	7368.	160121380.	17763.	192.	4569.	1.414	1457.	0.451	6026.	1.864	26574.	0.336	8916.
WASHINGTON	245808.	9193.	2259712900.	4534.	603.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	439890.
WHEELER	1513.	5489.	6328817.	12385.	920.	4762.	1.988	6985.	2.917	11747.	4.905	539.	0.883	476.
YAMHILL	55332.	6889.	381182150.	5869.	1508.	0.	0.000	59.	0.045	59.	0.045	6443241.	0.008	51672.

SOUTH DAKOTA

Livestock Dependency on Federal Grazing by Counties

County	Population ^{1/}	Income Per Capita ^{1/}	Total County Income	No. of Beef Cows ^{1/}	No. of Sheep Equivalents ^{2/}	BLM ^{4/} AUM's	Percent ^{3/} Dependent	USFS ^{4/} AUM's	Percent ^{3/} Dependent	Total Federal Grazing	Percent ^{3/} Federal Grazing Dependent	Income to Federal Grazing Ratio	Federal AUM's to Livestock Ratio	County Income to Livestock Ratio
AURORA	3628.	4373.	15865244.	23670.	1236.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	637.
BEADLE	19195.	6259.	120141500.	38465.	1927.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	2974.
BENNETT	3044.	3965.	12069460.	20897.	0.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	578.
BON HOMME	8059.	4609.	37143931.	18719.	562.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	1926.
BROOKINGS	24332.	5468.	133047370.	24468.	1634.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	5097.
BROWN	36962.	6189.	228757810.	40740.	1945.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	5359.
BRULE	5245.	4669.	24488905.	31956.	1292.	130.	0.022	0.	0.000	130.	0.022	188376.	0.004	737.
BUFFALO	1795.	2642.	4742390.	13590.	628.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	334.
Butte	8372.	5633.	47159476.	22222.	12708.	39395.	6.266	0.	0.000	39395.	6.266	1197.	1.128	1350.
CAMPBELL	2243.	4042.	9066206.	14079.	809.	36.	0.013	0.	0.000	36.	0.013	251839.	0.002	609.
CHARLES MIX	9680.	4128.	39959040.	43590.	893.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	898.
CLARK	4894.	4634.	22678796.	25304.	1111.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	859.
CLAY	13689.	5443.	74509227.	6065.	350.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	11615.
CODINGTON	20885.	6015.	125623270.	11257.	1091.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	10174.
CORSON	5196.	3521.	18295116.	37134.	1549.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	473.
CUSTER	6000.	5974.	35844000.	15158.	214.	758.	0.274	24843.	8.978	25601.	9.252	1400.	1.665	2332.
DAVISON	17820.	5675.	101128500.	16213.	497.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	6052.
DAY	8133.	4825.	39241725.	16092.	1480.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	2233.
DEUEL	5289.	4450.	23536050.	11712.	774.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	1885.
DEWEY	5366.	3943.	21158138.	28801.	1166.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	706.
DOUGLAS	4181.	3774.	15779094.	15327.	402.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	1003.
EDMUNDS	5159.	4435.	22880165.	26134.	657.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	854.
FALL RIVER	8439.	6197.	52296483.	22737.	1647.	1279.	0.291	3727.	0.849	5006.	1.141	10447.	0.205	2145.
FAULK	3327.	4324.	14385948.	27505.	1821.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	491.
GRANT	9013.	5200.	46867600.	10388.	402.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	4344.
GREGORY	6015.	4417.	26568255.	41389.	555.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	633.
HAakon	2794.	4924.	13757656.	31232.	575.	381.	0.067	0.	0.000	381.	0.067	36109.	0.012	433.
HAMLIN	5261.	4458.	23453538.	9225.	424.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	2431.
HAND	4948.	4892.	24205616.	42818.	2350.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	536.
HANSON	3415.	4029.	13759035.	14458.	843.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	899.
HARDING	1700.	5132.	8724400.	33810.	7103.	6685.	0.908	9700.	1.317	16385.	2.225	532.	0.400	213.
HUGHES	14220.	7217.	102625740.	12159.	519.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	8095.
HUTCHINSON	9350.	4800.	44880000.	33968.	1106.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	1280.
HYDE	2069.	4674.	9670506.	25682.	1454.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	356.
JACKSON	3437.	4623.	15889251.	12579.	0.	135.	0.060	0.	0.000	135.	0.060	117698.	0.011	1263.
JERARD	2929.	4794.	14041626.	17141.	1425.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	756.
JONES	1463.	5171.	7565173.	13226.	249.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	561.
KINGSBURY	6679.	4878.	32580162.	22995.	1555.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	1327.

SOUTH DAKOTA (Continued)

Livestock Dependency on Federal Grazing by Counties

County	Population ^{1/}	Income Per Capita ^{1/}	Total County Income	No. of Cows ^{2/}	No. of Sheep Equivalents ^{2/3/}	BLM ^{4/} AUM's	Percent ^{3/} Dependent	USFS ^{4/} AUM's	Percent ^{3/} Dependent	Total Federal Grazing	Percent ^{3/} Federal Grazing Dependent	Income to Federal Grazing Ratio	Federal AUM's to Livestock Ratio	County Income to Livestock Ratio
LAKE	10724.	5378.	57673672.	17009.	620.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	3272.
LAWRENCE	18339.	5821.	106751310.	10062.	353.	381.	0.203	21389.	11.410	21770.	11.613	4904.	2.090	10250.
LINCOLN	13942.	6047.	84307274.	12830.	845.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	6165.
LYNAM	3864.	4763.	18404232.	29963.	542.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	603.
MC COOK	6444.	4837.	31169628.	19808.	829.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	1510.
MC PHERSON	4027.	4277.	17223479.	26724.	421.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	634.
MARSHALL	5404.	4928.	26630912.	23116.	2153.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	1054.
MEADE	20717.	5564.	115269380.	54520.	6540.	12538.	1.141	2954.	0.269	15492.	1.410	7441.	0.254	1888.
MELLETTE	2249.	3581.	8053669.	23137.	179.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	345.
MINER	3739.	4201.	15707539.	18015.	1134.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	820.
MINNEHAHA	109435.	7206.	788588610.	22398.	1216.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	33395.
MOODY	6692.	5519.	36933148.	13506.	967.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	2552.
PENNINGTON	70361.	6594.	463960430.	30936.	469.	4742.	0.839	31416.	5.558	36158.	6.396	12831.	1.151	14773.
PERKINS	4700.	5817.	27339900.	44591.	6331.	2234.	0.244	0.	0.000	2234.	0.244	12238.	0.044	537.
POTTER	3674.	4759.	17484566.	15577.	1711.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	1011.
ROBERTS	10911.	4480.	48881280.	18084.	708.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	2691.
SANBORN	3213.	3918.	12588534.	19074.	1739.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	605.
SHANNON	11323.	2637.	29858751.	17111.	0.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	1745.
SPINK	9201.	5141.	47302341.	34818.	2738.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	1260.
STANLEY	2533.	6151.	15580483.	16506.	145.	4909.	1.638	0.	0.000	4909.	1.638	3174.	0.295	936.
SULLY	1990.	4731.	9414690.	12783.	643.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	701.
TODD	7328.	3159.	23149152.	21825.	58.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	1058.
TRIPP	7268.	5077.	36899636.	41499.	669.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	875.
TURNER	9255.	5358.	49588290.	15345.	839.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	3064.
UNION	10938.	5638.	61668444.	11066.	277.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	5437.
WALWORTH	7011.	5370.	37649070.	14641.	395.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	2504.
WASHARAUGH	0.	0.	0.	12453.	0.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	0.
YANKTON	18952.	6128.	116137850.	12629.	381.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	8927.
ZIEBACH	2308.	3042.	7020936.	19899.	1498.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	328.
TOTALS	690768.	5697.	3935623608.	1502830.	89353.	73603.	0.257	94030.	0.328	167633.	0.585	23476.	0.105	2472.

UTAH

Livestock Dependency on Federal Grazing by Counties

County	Population ^{1/}	Income Per Capita ^{1/}	Total County Income	No. of Cows ^{2/}	No. of Sheep Equivalents ^{2/}	BLM ^{3/} AUM's	Percent ^{2/} Dependent	USFS ^{4/} AUM's	Percent ^{2/} Dependent	Total Federal Grazing	Percent ^{2/} Federal Grazing Dependent	Income to Federal Grazing Ratio	Federal AUM's to Livestock Ratio	County Income to Livestock Ratio
BEAVER	4378.	4908.	21487224.	10122.	588.	92988.	48.235	9229.	4.787	102217.	53.023	210.	9.544	2006.
BOX ELDER	33222.	5798.	192621168.	28418.	10041.	43545.	6.290	5930.	0.857	49475.	7.147	3893.	1.286	5008.
CACHE	57176.	5401.	308807580.	7519.	2008.	0.	0.000	18052.	10.527	18052.	10.527	17107.	1.895	32414.
CARBON	22179.	4883.	152658068.	4408.	565.	27234.	21.698	2534.	2.035	29788.	23.733	5125.	4.272	21893.
DAGGETT	769.	5662.	4354078.	2531.	66.	6795.	14.536	9272.	19.834	16067.	34.370	271.	6.187	1677.
DAVIS	146540.	6275.	919538500.	6432.	229.	0.	0.000	1487.	1.240	1487.	1.240	618318.	0.223	138048.
DUCHESE	12565.	5531.	69497015.	24321.	2815.	12868.	2.634	26055.	5.334	38923.	7.969	1786.	1.434	2561.
EMERY	11451.	5896.	67515096.	11957.	1025.	103490.	44.288	18007.	7.706	121497.	51.994	556.	9.359	5201.
GARFIELD	3673.	4969.	18251137.	10228.	741.	71618.	36.273	46885.	23.746	118503.	60.019	154.	10.803	1664.
GRAND	8241.	6495.	53525295.	2684.	0.	87592.	181.305	4865.	10.071	92457.	191.376	579.	34.448	19942.
IRON	17349.	5158.	89486142.	8251.	4311.	69045.	26.341	10953.	4.179	79998.	30.520	1119.	5.494	6145.
JUAB	5530.	5223.	28883190.	8591.	451.	111726.	67.161	10812.	6.499	122538.	73.660	236.	13.259	3125.
KANE	4024.	4528.	18220672.	6047.	368.	69026.	59.778	5565.	4.820	74591.	64.598	244.	11.628	2840.
MILLARD	8970.	4809.	43136730.	24615.	2673.	188968.	38.472	20545.	4.183	209513.	42.655	206.	7.678	1581.
MORGAN	4917.	6237.	30667329.	2898.	4289.	0.	0.000	628.	0.486	628.	0.486	48808.	0.087	4267.
PIUTE	1329.	4893.	6502797.	3681.	742.	7300.	9.169	12728.	15.987	20028.	25.156	325.	4.528	1470.
RICH	2100.	5821.	12224100.	22299.	4097.	23983.	5.048	3460.	0.728	27443.	5.776	445.	1.040	463.
SALT LAKE	619066.	7016.	4343367100.	4607.	2655.	0.	0.000	3568.	2.730	3568.	2.730	1217325.	0.491	598095.
SAN JUAN	12253.	3701.	45348353.	13869.	0.	102788.	41.174	38111.	15.266	140899.	56.441	322.	10.159	3270.
SAN PETE	14620.	4531.	66243220.	14607.	12141.	19599.	4.071	33150.	6.885	52749.	10.956	1256.	1.972	2477.
SEVIER	14727.	5481.	80718687.	13932.	3214.	10963.	3.552	48397.	15.681	59360.	19.233	1360.	3.462	4708.
SUMMIT	10198.	8466.	86336268.	5931.	5671.	136.	0.065	19598.	9.385	19734.	9.450	4375.	1.701	7441.
TOOFILE	26033.	4458.	168121110.	10425.	5510.	124066.	43.254	5673.	1.978	129739.	45.232	1296.	8.142	10350.
UINTAH	20506.	5768.	118278610.	19859.	6867.	120350.	25.017	9682.	2.013	130032.	27.030	910.	4.865	4426.
UTAH	218106.	5208.	1135896000.	20489.	4979.	6242.	1.362	45749.	9.980	51991.	11.341	21848.	2.041	44601.
WASATCH	8523.	5466.	46586718.	3003.	6710.	0.	0.000	31904.	18.248	31904.	18.248	1460.	3.285	4796.
WASHINGTON	26065.	4869.	126910490.	9163.	411.	28745.	16.680	17658.	10.247	46403.	26.927	2735.	4.847	13256.
WAYNE	1911.	4675.	8933925.	7190.	1860.	48971.	30.062	8711.	5.347	57682.	35.409	155.	6.374	987.
WEBER	144616.	6585.	952296360.	5548.	573.	0.	0.000	4525.	4.107	4525.	4.107	210465.	0.739	153579.
TOTALS	1461037.	6308.	9216412946.	315625.	87800.	1378038.	18.977	473753.	6.524	1851791.	25.501	4977.	4.590	22845.

WASHINGTON

Livestock Dependency on Federal Grazing by Counties

County	Population ^{1/}	Income Per Capita ^{1/}	Total County Income	No. of Beef Cows ^{2/}	No. of Sheep ^{2/3/} Equivalents	BLM ^{4/} AUM's	Percent ^{3/} Dependent	USFS ^{4/} AUM's	Percent ^{3/} Dependent	Total Federal Grazing	Percent ^{3/} Federal Grazing Dependent	Income to Federal Grazing Ratio	Federal AUM's to Livestock Ratio	County Income to Livestock Ratio
ADAMS	13267.	6593.	87469331.	15129.	279.	39.	0.014	0.	0.000	39.	0.014	2242803.	0.003	5677.
ASOTIN	16823.	6859.	115388960.	7340.	29.	666.	0.502	1469.	1.107	2135.	1.609	54051.	0.290	15659.
BENTON	109444.	8763.	959057770.	16260.	966.	572.	0.184	0.	0.000	572.	0.184	1676674.	0.033	55675.
CHELAM	45061.	7532.	339399450.	1313.	0.	1473.	6.233	6534.	27.647	8007.	33.880	42387.	6.098	258492.
CLALLAM	51648.	7665.	395881920.	3031.	88.	0.	0.000	24.	0.043	24.	0.043	16171647.	0.008	124923.
CLARK	192227.	7515.	1444585900.	9043.	264.	0.	0.000	2.	0.001	2.	0.001708130343.	0.000	155215.	
COLUMBIA	4057.	6347.	25749779.	4351.	92.	0.	0.000	4353.	5.443	4353.	5.443	5915.	0.980	5796.
COMLITZ	79548.	7608.	605201180.	2882.	98.	0.	0.000	37.	0.068	37.	0.068	16481514.	0.012	203088.
DOUGLAS	22144.	6789.	150335620.	9693.	51.	4627.	2.638	0.	0.000	4627.	2.638	32491.	0.475	15429.
FERRY	5811.	5583.	32442813.	6713.	74.	0.	0.000	11767.	9.632	11767.	9.632	2757.	1.734	4780.
FRANKLIN	35025.	7069.	247591730.	13968.	259.	1416.	0.553	0.	0.000	1416.	0.553	174853.	0.100	17403.
GARFIELD	2468.	7048.	17394464.	5758.	15.	6.	0.006	2605.	2.507	2611.	2.513	6662.	0.452	3013.
GRANT	48522.	6136.	297730990.	23945.	481.	3452.	0.785	0.	0.000	3452.	0.785	86249.	0.141	12189.
GRAYS HARBOR	66314.	7446.	493774040.	2966.	18.	0.	0.000	8.	0.015	8.	0.015	60511525.	0.003	165474.
ISLAND	44048.	7108.	313093180.	1355.	0.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	231065.
JEFFERSON	15965.	7749.	123712780.	1301.	0.	0.	0.000	33.	0.139	33.	0.139	3790220.	0.025	95091.
KING	1269749.	9588.	12174353000.	3707.	140.	0.	0.000	639.	0.922	639.	0.922	19066518.	0.166	3164636.
KITSAP	147152.	7814.	1149845700.	823.	13.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	1375414.
KITTITAS	24877.	6343.	157794810.	20450.	444.	2008.	0.534	1740.	0.463	3748.	0.997	42100.	0.179	7552.
Klickitat	15822.	6766.	107051650.	14638.	258.	1751.	0.653	16.	0.006	1767.	0.659	60573.	0.119	7187.
LEWIS	56025.	6675.	373966870.	7752.	197.	0.	0.000	787.	0.550	787.	0.550	474915.	0.099	47046.
LINCOLN	9604.	7712.	74066048.	20705.	256.	758.	0.201	0.	0.000	758.	0.201	97712.	0.036	3534.
MASON	31184.	7713.	221811790.	799.	0.	0.	0.000	8.	0.057	8.	0.057	27182817.	0.010	277612.
OKANOGAM	30639.	6283.	192504830.	28221.	434.	7137.	1.384	42093.	8.161	49230.	9.545	3910.	1.718	6718.
PACIFIC	17237.	7272.	125347460.	2624.	9.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	47606.

WASHINGTON (Continued)

Livestock Dependency on Federal Grazing by Counties

County	Population ^{1/}	Income Per Capita ^{1/}	Total County Income	No. of Boof Cows ^{2/}	No. of Sheep ^{2/3/} Equivalents	BLU ^{4/} AUM's	Percent ^{3/} Dependent	USFS ^{4/} AUM's	Percent ^{3/} Dependent	Total Federal Grazing	Percent ^{2/} Federal Grazing Dependent	Income to Federal Grazing Ratio	Federal AUM's to Livestock Ratio	County Income to Livestock Ratio
FEND OKEILL	8580.	5310.	45359800.	3231.	33.	0.	0.000	7309.	12.441	7309.	12.441	6233.	2.239	13958.
PIERCE	485643.	7417.	3602014100.	4345.	88.	0.	0.000	249.	0.312	249.	0.312	14472895.	0.056	812545.
SAN JUAN	7838.	8606.	67453828.	1201.	269.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	45887.
SKAGIT	64138.	7466.	478854300.	3871.	51.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	122094.
SKAMANIA	7919.	7907.	62615533.	621.	27.	0.	0.000	1444.	12.383	1444.	12.383	43353.	2.229	96629.
SMOHOMISH	337720.	8246.	2784839100.	5467.	118.	0.	0.000	324.	0.323	324.	0.323	8585643.	0.058	498628.
SPOKANE	341835.	7180.	2454375300.	11763.	240.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	204480.
STEVENS	28979.	5894.	170802220.	13495.	357.	1187.	0.476	5284.	2.119	6471.	2.595	26397.	0.467	12331.
THURSTON	124264.	7775.	966152600.	4867.	188.	0.	0.000	2.	0.002	2.	0.002473604216.	0.000	0.000	191128.
WAHIAKUM	3832.	8176.	31330432.	1619.	0.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	19352.
WALLA WALLA	47435.	6908.	327680980.	9340.	181.	6.	0.004	67.	0.039	73.	0.043	4469190.	0.008	34417.
WHATCOM	106701.	7270.	775716270.	6158.	112.	0.	0.000	0.	0.000	0.	0.000	0.	0.000	123719.
WHITMAN	40103.	6229.	249801580.	17408.	556.	103.	0.032	0.	0.000	103.	0.032	2425258.	0.006	13906.
YAKIMA	172508.	6555.	1130789900.	27498.	2934.	3153.	0.576	957.	0.175	4110.	0.750	275147.	0.135	37158.
TOTALS	4132156.	8077.	33373538008.	335701.	9619.	28354.	0.456	87753.	1.412	116107.	1.868	287439.	0.336	96645.

WYOMING

Livestock Dependency on Federal Grazing by Counties

County	Population ^{1/}	Income Per Capita ^{1/}	Total County Income	No. of Beef Cows ^{2/}	No. of Sheep Equivalents ^{2/}	BLM ^{4/} AUM's	Percent ^{3/} Dependent	USFS ^{4/} AUM's	Percent ^{3/} Dependent	Total Federal Grazing	Percent ^{3/} Federal Grazing Dependent	Income to Federal Grazing Ratio	Federal AUM's to Livestock Ratio	County Income to Livestock Ratio
ALBANY	29062.	6672.	193901660.	22893.	1435.	48432.	11.060	19808.	4.523	68240.	15.583	2841.	2.805	7970.
BIG HORN	11896.	6050.	71970800.	23497.	10190.	90983.	15.005	34668.	5.717	125651.	20.722	573.	3.730	2136.
CAMPBELL	24367.	9245.	225272910.	41207.	8384.	38687.	4.334	0.	0.000	38687.	4.334	5823.	0.780	4543.
CARBON	21896.	8227.	180138390.	58716.	12532.	309625.	24.143	33050.	2.577	342675.	26.720	526.	4.810	2528.
CONVERSE	14069.	8133.	114423170.	42599.	18254.	23916.	2.183	3913.	0.357	27829.	2.541	4112.	0.457	1880.
CROOK	5308.	6854.	36381032.	34700.	4635.	14859.	2.099	13378.	1.890	28237.	3.988	1288.	0.718	925.
FREMONT	38992.	7287.	284134700.	43504.	5586.	256754.	29.057	26706.	3.022	283460.	32.079	1002.	5.774	5788.
GOSHEN	12040.	6274.	75538960.	36928.	1420.	5396.	0.782	0.	0.000	5396.	0.782	13999.	0.141	1970.
HOT SPRINGS	5710.	7001.	39975710.	20365.	2611.	80616.	19.493	1379.	0.333	81995.	19.826	488.	3.569	1740.
JOHNSON	6700.	8023.	53754100.	33723.	15166.	56316.	6.400	32269.	3.667	88585.	10.066	607.	1.812	1100.
LARAMIE	68649.	7852.	539031940.	28703.	3631.	4623.	0.279	0.	0.000	1623.	0.279	332121.	0.050	16671.
LINCOLN	12177.	6442.	78444234.	23106.	5888.	123953.	23.751	48895.	9.369	172848.	33.119	454.	5.961	2706.
NATRONA	71856.	9353.	672069160.	31859.	22077.	184929.	19.048	294.	0.030	185223.	19.078	3628.	3.434	12460.
NIDBRARA	2924.	6481.	18950444.	25232.	4100.	20061.	3.800	0.	0.000	20061.	3.800	945.	0.684	646.
PARK	21639.	7214.	156103740.	31281.	2911.	69580.	11.305	44394.	7.213	113974.	18.519	1370.	3.333	4566.
PLATTE	11975.	7597.	90974075.	30137.	227.	13420.	2.455	59.	0.011	13479.	2.466	6749.	0.444	2996.
SHERIDAN	25048.	7785.	194998680.	43797.	3383.	5153.	0.607	38858.	4.576	44011.	5.182	4431.	0.933	4133.
SUBLETTE	4548.	7059.	32104332.	34186.	1817.	144820.	22.347	59266.	9.145	204086.	31.492	157.	5.669	892.
SWEETWATER	41723.	8880.	370500240.	10741.	6223.	420127.	137.588	3448.	1.129	423575.	138.717	875.	24.969	21840.
TETON	9355.	9040.	84569200.	8338.	0.	927.	0.618	50457.	33.619	51384.	34.237	1646.	6.163	10143.
VINTA	13021.	7518.	97891878.	19345.	6997.	33320.	7.027	1426.	0.301	34746.	7.328	2817.	1.319	3716.
WASHAKIE	9496.	7066.	67098736.	13822.	4348.	98612.	30.151	3554.	1.087	102166.	31.238	657.	5.623	3693.
WESTON	7106.	7357.	52278842.	23091.	2026.	14340.	3.172	516.	0.114	14856.	3.286	3519.	0.591	2081.
TOTALS	469557.	7945.	3730506933.	681770.	143841.	2056449.	13.838	416337.	2.802	2472786.	16.639	1509.	2.995	4518.

Footnotes

- 1/ 1980, Census of Population.
- 2/ 1978, Census of Agriculture.
- 3/ 1978, Census of Agriculture. Five sheep are equivalent to one cow.
- 4/ Information provided by the BLM and USFS. Best estimates available.
- 5/ Estimated by using 18 AUM's per beef cow and dividing this total into the federal AUM's. There are several sources of error in the reported permitted or sold AUM's per county and in the percent dependency calculations. These sources are:
 - a. The Census of Agriculture does not report livestock on Indian reservations.
 - b. Small reported total livestock in a county and reported federal AUM's may create percentages that are greater than 1.
 - c. If operators are in one county and the census counts the livestock in that county and the federal AUM's are in another, the actual dependency calculations may be misleading.
 - d. For the USFS, the National Grasslands and Land Utilization Project Aum's are not reported here.

APPENDIX III. TRIANGULAR DISTRIBUTION¹

A convenient alternative to the three methods described for estimating subjective probability distributions is the triangular distribution. Only three numbers are necessary to specify the distribution: the minimum, most likely, and maximum events.

In the example (Figure 4-3) the "lowest possible" wheat yield is 15 bushels, "the highest possible" yield is 55, and the "most likely" wheat yield is 30. If these three values can be supplied, the distribution is determined.

The triangular distribution offers a great deal of flexibility in the shape of the distribution. It can be skewed, or it can be symmetrical like a normal distribution. The primary advantage, however, is the ease with which it can be elicited by the decisionmaker.

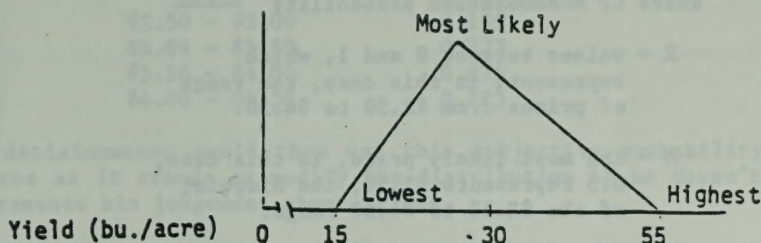


Figure 4-3. A Triangular Distribution of Crop Yields²

1. Nelson, A. Gene, George L. Casler, and Odell L. Walker. "Making Farm Decisions in a Risky World: A Guidebook," Oregon State University Service, July 1978. Reproduced by permission.

2. The results of the calculations in ranchers response to grazing fee increases are shown in the fourth and ninth column in Table 3 of Appendix V. Only the left half of the distribution (forage values less than \$8.00) is used. Generally, the assumptions are that at \$1.40 one hundred percent of the federal grazing will be used and at \$8.00 fifty percent of the federal grazing will be used. The other relationships between these two points are linear. The assumption is that distribution of forage values is triangular and ranchers will lease federal land only if the forage value of the resulting grazing is greater than or equal to the grazing fee.

We will use prices to illustrate how the probabilities for various events can be calculated using the triangular distribution and a formula. The decisionmaker would be asked to state the lowest, most likely, and highest wheat prices he would expect to occur. Suppose he says \$2.50, \$3.50, and \$4.50. Note that this distribution is symmetrical; there is the same chance of the price being above as below the most likely price. Triangular distribution functions can be symmetrical, but they can also be skewed in either direction. The shape will depend upon the decisionmaker's most likely value in relation to the minimum and maximum values he would expect.

Suppose our decisionmaker wants to compute the probabilities of the prices being in each of the four \$.50 ranges between \$2.50 and \$4.50 using the triangular distribution formula for computing a cumulative distribution. The formula is:

$$CP = 1 - \frac{X^2}{M}$$

where CP = cumulative probability

X = values between 0 and 1, which represent, in this case, the range of prices from \$2.50 to \$4.50.

M = the most likely price, in this case, 0.5 represents \$3.50, the midpoint of the \$2.50 to \$4.50 range.

This formula is used for values of X less than M. For values of X greater than M, the formula is:

$$CP = \frac{(1-X)^2}{(1-M)}$$

For values of X = M, either formula can be used. In this case also, M = 0.5.

Values of X are assigned to each price. For example, \$3.00 is 1/4 the range of prices so it is assigned a value of 0.25, etc. The X values are then substituted into the formulas to find the cumulative probabilities:

$$\text{For } X = .25; 1 - \frac{(.25)^2}{.5} = \frac{.0625}{.5} = 1 - .125 = .875$$

Thus, the probability of the price being greater than \$3.00 is 0.875. The remainder of the cumulative probabilities are shown below:

<u>Price</u>	<u>Values of X</u>	<u>Subjective Probability of yield being greater than X</u>
2.50	0.0	1.00
3.00	0.25	.875
3.50	0.50	.500
4.00	0.75	.125
4.50	1.00	.0

The probabilities of the price being in each of the \$.50 ranges (as calculated from the triangular distribution (function) are calculated from the cumulative function by subtraction:

<u>Price</u>	<u>Subjective Probability</u>
\$2.50 - \$3.00	0.125
\$3.00 - \$3.50	0.375
\$3.50 - \$4.00	0.375
\$4.00 - \$4.50	0.125

The decisionmaker could then use this subjective probability distribution of prices as it stands or modify the distribution if he doesn't believe that it represents his judgement about prices.

Now let's consider a triangular distribution in which the most likely value is not the midpoint between the low and the high values. Suppose a grower believes his most likely crop yield is 40 bushels but it could be as high as 50 or as low as 25. The yields of 5 bushel increments and the corresponding X values are shown below:

<u>Yield</u>	<u>Value of X</u>	<u>Subjective probability of yield being greater than X</u>
25	0.0	1.00
30	.2	.93
35	.4	.73
40 (M)	.6	.40
45	.8	.10
50	1.0	0.00

Using the triangular distribution function, the cumulative subjective probability distribution can be calculated. For a value of $X = .2$, the calculations are:

$$1 - \frac{(.2)^2}{.6} = 1 - \frac{.04}{.6} = 1 - .07 = .93$$

The probabilities of the wheat yield falling in each 5 bushel ranges are:

<u>Wheat Yield</u>	<u>Subjective Probability</u>
25-30	.07
30-35	.20
35-40	.33
40-45	.30
45-50	.10

The triangular distribution function has the advantage that the decisionmaker does not need to think in detail about the entire probability distribution. He needs only to specify the most likely and lowest and highest values that he believes could occur. A few rather simple calculations using the triangular distribution formulas allow the computation of the probabilities of the value falling in any size ranges between the high and low values.

The decisionmaker can then inspect the subjective probabilities and revise them if necessary. He may, after inspection, wish to change the high, low, or most likely values and recalculate using the triangular formulas. Alternatively, he may just revise the distribution, making sure that it continues to add to 1.0.

Appendix IV. Grazing Fees --base data--used in computing annual adjustment index. Rate (dollars) per head for pasturing cattle on nonirrigated private grazing land.

	N. Dak.	S. Dak.	Nebr.	Kansas	Okla.	Tex.	Idaho	Wyo.	Colo.	N. Mex.	Ore.	Mont.	Ariz.	Utah	Nev.	Wash.	Calif.
Year/1																	
1964	1.84	3.13	3.75	3.52	2.76	2.38	3.33	3.40	3.51	3.09	3.15	3.03	2.86	3.42	4.28	3.17	4.02
1965	1.94	3.16	3.89	3.54	2.84	2.35	3.25	3.68	3.70	3.42	3.16	3.14	2.87	3.51	4.00	2.98	4.02
1966	2.09	3.34	4.20	3.85	3.14	2.43	3.40	3.70	3.93	3.53	3.51	3.31	2.83	3.50	4.06	3.26	4.08
1967	2.10	3.72	4.35	3.99	3.05	3.38	3.47	3.73	4.05	3.37	3.74	3.59	2.84	3.66	N/A	3.32	3.93
1968	2.37	3.80	4.50	4.15	3.15	2.71	3.48	3.95	4.03	3.43	3.64	3.66	3.10	3.53	4.43	3.63	3.71
1969	2.38	3.76	4.76	4.28	3.52	2.76	3.50	4.04	4.03	3.47	3.67	3.71	2.91	3.64	4.43	3.62	3.95
1970	2.58	4.16	4.89	4.46	3.50	2.79	3.71	4.28	4.03	3.62	3.70	3.87	3.44	3.78	4.76	3.66	4.44
1971	2.61	4.22	4.90	4.35	3.67	3.04	3.79	4.28	4.23	3.40	3.61	4.03	2.78	4.05	4.32	3.63	4.44
1972	2.76	4.41	5.12	4.55	3.80	3.19	3.99	4.45	4.45	3.92	3.80	4.32	2.52	4.34	3.94	3.53	4.52
1973	3.00	4.69	5.78	4.97	4.23	4.12	4.41	4.98	5.11	4.10	4.20	4.82	2.79	4.81	4.36	3.91	4.72
1974	4.13	5.79	7.16	6.40	5.11	4.14	5.43	5.81	5.51	4.41	5.29	6.87	3.21	5.51	5.41	5.36	6.78
1975	4.17	6.22	8.04	6.56	4.38	3.72	6.55	6.27	5.71	4.94	5.11	7.03	4.60	5.76	5.62	6.04	5.54
1976	4.39	6.41	9.61	12.86	4.62	3.96	6.14	7.07	6.26	5.15	5.18	7.38	5.63	6.04	7.50	5.81	6.99
1977	4.49	8.91	9.77	11.97	5.43	4.58	6.20	7.06	6.11	5.83	5.26	7.28	4.90	6.88	8.21	5.83	5.81
Year/2																	
1978	5.56	9.21	10.23	9.11	5.67	4.27	6.43	8.09	7.26	5.94	6.64	7.79	3.42	5.73	4.10	6.67	8.07
1979	6.29	10.13	11.20	9.97	5.94	4.65	6.47	8.74	8.12	6.83	6.88	7.78	4.63	6.30	2.55	7.29	8.19
1980	6.35	11.79	11.96	9.16	4.17	7.06	6.61	8.37	8.26	4.50	7.56	9.07	4.54	5.78	6.19	7.39	8.80
1981	8.49	11.97	13.81	9.06	5.88	6.78	8.20	7.93	8.20	6.98	7.54	9.40	5.60	7.24	6.29	8.18	10.48
1982	8.34	11.09	13.80	9.59	6.29	8.06	7.98	8.46	9.04	6.26	7.70	8.90	2.53	9.29	5.70	6.67	9.23

1/ Data from General Farm Questionnaire.

2/ Data from June Enumerative Survey.

Source: ESB-Econ; work sheets reflects data as originally rounded. Will not agree with data published since 1975.

**APPENDIX V. IMPLAN VS. PRIMARY DATA INPUT/OUTPUT MODELS: A COMPARISON OF
IMPACT ESTIMATES FOR HYPOTHETICAL CHANGES IN THE FEDERAL GRAZING FEE.**

The tables in this appendix are a result of a program written for a Kaypro personal computer. Similar impacts can be estimated for any area given the information on the bottom of table 1, table 2, and table 3 of this Appendix. The information on the bottom of table 1 lists the total income and employment coefficients related to personal consumption expenditures, range improvement expenditures and local government expenditures. On the bottom of table 2 lists the areas USFS and BLM AUM's as well as the 1980 total county income. Table 3 lists the total amount of receipts per AUM for the area as well as the total local personal income and employment that is generated by the expenditures related to each AUM.

The total personal income and employment coefficients are obtained from the IMPLAN models for the following areas:

Gila County, Arizona
Modoc County, California
Gunnison County, Colorado
Owyhee County, Idaho
Beaverhead County, Montana
Elko County, Nevada
Catron County, New Mexico
Billings County, North Dakota
Harney County, Oregon
Fall River County, South Dakota
Millard County, Utah
Garfield County, Washington
Sublette County, Washington
All counties of Oregon

Generally, the procedure is to estimate the total local income effect resulting from a grazing fee increase. The negative effect is the loss of income of the grazing fee increase plus the loss of personal income that results from decreased rancher household spending (and ranching related expenditures in the case of decreased use). Positive income impacts result from increased rangeland development and local government expenditures that take place as the USFS or BLM distribute the collected grazing fees according to past procedures and laws governing such disbursements.

The total local income and employment effect depends on several factors. The main factors are:

1. The price increase.
2. The total income and employment coefficients.
3. The total number of federal grazing AUM's in the area.
4. Total income in the area.

The following is a step by step explanation of the procedures used to calculate the local income (employment) impacts. The IMPLAN model of Gila County, Arizona in the USFS section is used for the example:

Table I. Total Local Personal Income Impact per AUM.

1. Decrease in ranchers income - The grazing fee increase from \$1.40 to \$2.00 leads to a \$.60 decrease in rancher's income.

Community impact - This reduction in \$.60 rancher's income causes a reduction in household expenditures and decrease of \$.43 in community income. This is calculated using the item labeled \$.71 Pers. Cons. Inc. at the bottom of page. This is the personal income coefficient related to household expenditures that is calculated with the use of the IMPLAN model.

2. Rangeland improvement fund - The \$.60 in increased grazing fee will be distributed so that 50% or \$.30 will be returned to the local community for rangeland improvement projects. The IMPLAN model for this area calculated that for each dollar of new demand generated in the construction sector (rangeland improvements) .64 of local income will be generated. This is the .64 Range Imp. In on the bottom of the page. The resulting personal income impact is, therefore, .19 ($$.30 \times .64 = .19$).

3. Local government - Part of the increase in grazing fee (25% for the USFS) will be distributed to local governments from the ones from which the grazing fee was collected. According to IMPLAN models about 60 percent of local government expenditures are for salaries. This \$.09 is multiplied by the .71 personal income coefficient to get the estimated \$.06 community income impact. The other \$.06 that is spent on other goods and services is multiplied by the \$.62 Local Government Income coefficient to estimate the \$.04 community impact.

4. Federal Treasury - All funds (25% in the case of the USFS) that go to the Federal Treasury and are not returned directly to the local community are lost to community.
5. Total Local Personal Income Impact. This is calculated by subtracting the original \$.60 loss of ranchers income and the \$.43 loss of community personal income and adding the \$.19 of personal income generated from rangeland improvements and local government expenditures, \$.04, as well as the income that is received by local government personnel, \$.09. The net impact of these outflows and inflows is a $-.65 (-.60 - .43 + .19 + .04 + .09 + .06)$. This is the amount of total local personal income lost if the grazing fee were raised by \$.65.
6. The total local employment impact can be calculated in the same manner.

Table 2 - Total Federal grazing fee increase impact.

1. USFS and BLM AUM's - The local USFS and BLM AUM's are listed on the bottom of the page. These totals are multiplied by the total local personal impact per AUM that results from a grazing fee which was calculated on the previous page. For example, 200440 USFS AUM's * $-.65 = \$-129846.03$. This impact plus the impact of the BLM AUM's are added to arrive at the total Federal grazing fee increase impact. ($\$129846 + \$4744 = \$134590$).

Percent Income Decrease in the Local Economy - The total Federal grazing fee increase impact is divided by the 1980 total county income which is listed at the bottom of the page to calculate the percent decrease in the local economy ($134590 - 204347880 = -.07$ percent).

2. This table also estimates total employment impact and also calculates the total income and employment impact if all grazing fee increases were to go to the Federal Treasury and not returned to the local area.

Table 3 - Total Federal Grazing Fee Effect of Decreased Use of Grazing.

1. Negative response to fee increases - These responses were calculated using the triangular distribution that is explained in Appendix II. The total number of USFS and BLM AUM's are multiplied by the estimated negative response to arrive at the decrease in use of public grazing (For USFS AUM's, $200440 * .27 = 54118.80$). This decrease in use is then multiplied by the amount of personal local total income (8.06 on the bottom of the page) that would be lost for each federal grazing AUM that is reduced ($54118.80 * 8.06 = 43497.53$).
2. Total Federal grazing fee effect of decreased use of grazing - This is the sum of USFS and BLM negative impact on local personal income.

This page does not include the negative impact of the loss of rancher's income that results from increased grazing fees.

Table 4 - Combined effect of decreased use and decreased income due to higher fees - The federal AUM's that are retained are multiplied by the total personal income impact per AUM to calculate the total local income lost due to fee increases (.73 * 200440 USFS AUM's * .65 = 94727.60). These USFS and BLM total impacts due to decreased incomes are added to the decreased use due to higher fees from table 3 to calculate the combined effect. The total is divided by the total county income to estimate the percent income decrease in the local economy.

$$\left(\frac{98250.72 + 4501.31}{204347880} \right) = .27 \text{ percent}$$

Table 1. Estimated local community personal income and local employment impact of grazing fee increases (per AUM) Gila County, Arizona, I-O model (USFS IMPLAN). /1

Grazing fee/2	Grazing fee increase	Decrease in ranchers income/3	Community impact/4	Rangeland improvement fund/5 (502)		Local government expenditure	Local government (252)			Federal treasury (252)			Total local personal income impact/7	Total local employment impact/7	
				Improvement fund	Community impact/6		Community income impact	Local government salaries	Community income impact	Local expenditure	Community income impact				
-----USFS-----															
1.40															
2.00	0.60	-0.60	-0.43	0.30	0.19	0.06	0.04	0.09	0.06	0	0	0	-0.65	-0.000007	
2.53	1.13	-1.13	-0.80	0.57	0.36	0.12	0.08	0.16	0.11	0	0	0	-1.22	-0.000013	
(BLM Sect. 3) (Sect. 15 is similar to USFS)/10															
Rangeland improvement (502)						Local government (12.52)				Federal treasury (37.52)					
1.40															
2.00	0.60	-0.60	-0.43	0.30	0.19	0.03	0.02	0.04	0.03	0	0	0	-0.74	-0.000012	
2.53	1.13	-1.13	-0.80	0.57	0.36	0.06	0.04	0.08	0.06	0	0	0	-1.40	-0.000023	
Distributions stay the same; all increases go to the Federal Treasury (USFS and BLM)/8															
1.40															
2.00	0.60	-0.60	-0.43											-1.03	-0.000029
2.53	1.13	-1.13	-0.80											-1.93	-0.000055

0.71 Pers Cons In
0.64 Range Imp In
0.62 Local Govt In
0.00004830 Pers Cons Emp
0.00004070 Range Imp Emp
0.00003730 Local Govt Emp

Table 2. Estimated local community personal income and local employment impact of grazing fee increases, Gila County, Arizona. Assumes no decrease in grazing on federal lands. /9

Grazing fee/2	Grazing fee increase	Total USFS AUM's/11	USFS local personal income impacts/12	Total USFS local employment impact/12	Total BLM AUM's/11	Local personal income impacts/12	Total BLM local employment impact/12	Total federal grazing fee increase impact		Percent Income decrease in the local economy/13	Total federal grazing fee impact when all increases go to the Federal Treasury		Percent Decrease in local economy/13
								Local personal income	Local employment		Local personal income	Local employment	
1.40													
2.00	0.60	200440.00	-129846.03	-1.41	6403.00	-4744.00	-0.08	-134590.03	-1.49	-0.07	-212220.92	-5.99	-0.103853
2.53	1.13	200440.00	-129846.03	-2.65	6403.00	-8934.53	-0.15	-138780.57	-2.81	-0.07	-399682.73	-11.29	-0.195589

200440 USFS AUM's
6403 BLM/AUM's
204347880 County Inc.

Table 3. Estimated local community personal income and local employment impact of grazing fee increases (decrease in grazing in response to fee increases), /14 Gila County, Arizona.

Grazing fee	Grazing fee increase	Total USFS AUM's/11	Negative response to fee increase on use of Federal AUM's/14	Decrease in use of public grazing in AUM's	Negative impact on local personal income/15*	Negative impact on local employment	Total BLN AUM's	Negative response to fee increase or Federal AUM's/14	Decrease in use of BLM land AUM's	Negative impact on local personal income	Negative impact on local employment	Total Federal grazing fee effect (decreased use)	
												Local personal income	Local employment
1.40													
2.00	0.60	200440.00	-0.27	-54118.80	-436197.53	-12.99	6403.00	-0.27	-1728.81	-13934.21	-0.41	-450131.74	-13.403427
2.53	1.13	200440.00	-0.50	-100220.00	-807773.20	-24.05	6403.00	-0.50	-3201.50	-25804.09	-0.77	-833577.29	-24.821160

*This was treated as a decrease in total expenditures on ranch related items less the amount that is purchased by the Livestock Sector from the Feed and Grazing Sector. The per AUM expenditure was calculated using the total receipts per AUM for the area. Total receipts per public grazing unit are \$12.41 (1977 dollars) based on Kerry Gee's ranch budgets, Economic Research Service, Colorado State University, Fort Collins, Colorado. A decrease in final demand in the ranching sector results in a decrease of \$8.06 of local personal income for a public grazing AUM. The corresponding local employment decrease is .00024 per AUM for public grazing.

12.41 Receipts AUM
8.06 Per Inc - AUM
0.000240 Emp - AUM

Table 4. Estimated local community personal income and local employment impact of grazing fee increases (decreased grazing and reduced ranchers' income impact), Gila County, Arizona.

Grazing fee/3	Grazing fee increase	USFS		BLM		Total Federal impact of Federal grazing fee increase (decreased income)		Combined effect of decreased use & decreased income due to higher fees/18		Percent income decrease in local economy/13
		Total local income lost due to fee increase/16	Total local employment lost due to fee increase/16	Total local income lost due to fee increase/16	Total local employment lost due to fee increase/16	Personal income/17	Local employmt/17	Local personal income	Local employment	
1.40										0
2.00	0.60	-94787.60	-1.03	-3463.12	-0.06	-98250.72	-1.09	-548382.46	-14.49	-0.27
2.52	1.13	-122271.68	-1.33	-4467.27	-0.07	-126738.95	-1.40	-60316.24	-26.22	-0.47

Table 1. Estimated local community personal income and local employment impact of grazing fee increases (per AUM) Modoc County, California, I-O model (USFS IMPLAN). /1

Grazing fee/2	Grazing fee increase	Decrease in ranchers income/3	Community impact/4	Rangeland improvement fund/5 (50%)		Local government (25%)				Federal treasury (25%)		Total local personal income impact/7	Total local employment impact/7
				Improvement fund	Community impact/6	Local government expenditure	Community income impact	Local government salaries	Community income impact	Local expenditure	Community income impact		
USFS													
1.40													
2.00	0.60	-0.60	-0.34	0.30	0.19	0.06	0.04	0.09	0.05	0	0	-0.38	0.000001
4.00	2.60	-2.60	-1.48	1.30	0.81	0.28	0.18	0.37	0.21	0	0	-2.51	0.000005
6.00	4.60	-4.60	-2.62	2.30	1.43	0.49	0.33	0.66	0.37	0	0	-4.44	0.000009
8.00	6.60	-6.60	-3.76	3.30	2.05	0.71	0.47	0.94	0.54	0	0	-6.37	0.000013
(BLM Sect. 3) (Sect. 15 is similar to USFS)/10													
				Rangeland improvement (50%)		Local government (12.5%)				Federal treasury (37.5%)			
1.40													
2.00	0.60	-0.60	-0.34	0.30	0.19	0.03	0.02	0.04	0.02	0	0	-0.67	-0.000002
4.00	2.60	-2.60	-1.48	1.30	0.81	0.14	0.09	0.19	0.11	0	0	-2.89	-0.000010
6.00	4.60	-4.60	-2.62	2.30	1.43	0.25	0.16	0.33	0.19	0	0	-5.12	-0.000018
8.00	6.60	-6.60	-3.76	3.30	2.05	0.35	0.23	0.47	0.27	0	0	-7.34	-0.000026
Distributions stay the same; all increases go to the Federal Treasury (USFS and BLM)/8													
1.40													
2.00	0.60	-0.60	-0.34									-0.94	-0.000019
4.00	2.60	-2.60	-1.48									-4.08	-0.000084
6.00	4.60	-4.60	-2.62									-7.22	-0.000148
8.00	6.60	-6.60	-3.76									-10.36	-0.000213

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0.37 Pers Cons In
0.62 Range Imp In
0.66 Local Govt In
0.00003220 Pers Cons Exp
0.00004160 Range Imp Exp
0.00003540 Local Govt Exp

Table 2. Estimated local community personal income and local employment impact of grazing fee increases, Modoc County, California. Assumes no decrease in grazing on federal lands. /9

Grazing fee/2	Grazing fee increase	Total USFS AUM's/11	USFS local personal income impacts/12	Total USFS local employment impact/12	Total BLM AUM's/11	Local personal income impacts/12	Total BLM local employment impact/12	Total federal grazing fee increase impact		Percent income decrease in the local economy/13	Total federal grazing fee impact when all increases go to the Federal Treasury		Percent Decrease in local economy/13
								Local personal income	Local employment		Local personal income	Local employment	
1.40													
2.00	0.60	73034.00	-42300.93	0.09	160.00	-106.82	-0.00	-42407.74	0.09	-0.08	-68948.75	-1.41	-0.122/17
4.00	2.60	73034.00	-183304.02	0.39	160.00	-462.87	-0.00	-183766.89	0.39	-0.33	-298777.91	-6.13	-0.528/41
6.00	4.60	73034.00	-324307.11	0.68	160.00	-818.92	-0.00	-325126.03	0.68	-0.58	-528607.07	-10.84	-0.935/65
8.00	6.60	73034.00	-465310.20	0.98	160.00	-1174.97	-0.00	-466485.18	0.98	-0.83	-758416.23	-15.56	-1.342/89

73034 USFS AUM's
160 BLM/AUM's
56507430 County Inc.

Table 3. Estimated local community personal income and local employment impact of grazing fee increases (decrease in grazing in response to fee increases), /14 Modoc County, California.

Grazing fee	Grazing fee increase	Total USFS AUM's/11	Negative response to fee increase on use of Federal AUM's/14	Decrease in use of public grazing in AUM's	Negative impact on local personal income/15	Negative impact on local employment	Total BLM AUM's	Negative response to fee increase or Federal AUM's/14	Decrease in use of BLM land AUM's	Negative impact on local personal income	Negative impact on local employment	Total Federal grazing fee effect (decreased use)	
												Local personal income	Local employment
1.40													
2.00	0.60	73034.00	-0.04	-2921.36	-32134.96	-0.88	160.00	-0.04	-6.40	-70.40	-0.00	-32205.36	-0.878328
4.00	2.60	73034.00	-0.17	-12415.78	-136573.58	-3.72	160.00	-0.17	-27.20	-299.20	-0.01	-136872.78	-3.732894
6.00	4.60	73034.00	-0.29	-21179.86	-232978.46	-6.35	160.00	-0.29	-46.40	-510.40	-0.01	-233488.86	-6.367878
8.00	6.60	73034.00	-0.42	-30674.28	-337417.08	-9.20	160.00	-0.42	-67.20	-739.20	-0.02	-338156.28	-9.222444

*This was treated as a decrease in total expenditures on ranch related items less the amount that is purchased by the Livestock Sector from the Feed and Grazing Sector. The per AUM expenditure was calculated using the total receipts per AUM for the area. Total receipts per public grazing unit are \$17.78 (1977 dollars), based on Kerry Cas's ranch budgets, Economic Research Service, Colorado State University, Fort Collins, Colorado. A decrease in final demand in the ranching sector results in a decrease of \$11.00 of local personal income for a public grazing AUM. The corresponding local employment decrease is .000300 per AUM for public grazing.

17.78 Receipts AUM
11.00 Pers Inc - AUM
0.000300 Emp - AUM

Table 4. Estimated local community personal income and local employment impact of grazing fee increases (decreased grazing and reduced ranchers' income impact), Modoc County, California.

Grazing fee/1	Grazing fee increase	HRRS		RIM		Total Federal impact of Federal grazing fee increase (decreased income)		Combined effect of decreased use & decreased income due to higher fees/18		Percent decrease in local economy/13
		Total local income lost due to fee increase/16	Total local employment lost due to fee increase/16	Total local income lost due to fee increase/16	Total local employment lost due to fee increase/16	Personal	Local	Local personal income	Local employment	
						income/17	employt/17			
1.40										
2.00	0.60	-40608.89	0.09	-102.34	-0.00	-40711.43	0.09	-72916.79	-0.88	-0.13
4.00	2.60	-152142.34	0.32	-384.18	-0.00	-152526.32	0.32	-289399.30	-3.73	-0.31
6.00	4.60	-230258.05	0.49	-581.43	-0.00	-230839.48	0.48	-444328.34	-4.37	-0.82
8.00	6.60	-269879.92	0.37	-681.48	-0.00	-270561.48	0.37	-608717.68	-9.22	-1.08

Table 1. Estimated local community personal income and local employment impact of grazing fee increases (per AUM) Gunnison County, Colorado, I-O model (USFS IMPLAN). /1

Grazing fee/2	Grazing fee increase	Decrease in ranchers income/3	Community impact/4	Rangeland improvement fund/5 (50%)		Local government (25%)				Federal treasury (25%)			
				Improvement fund	Community impact/6	Local government expenditure	Community income impact	Local government salaries	Community income impact	Local expenditure	Community income impact	Total local personal income impact/7	Total local employment impact/7
-----USFS-----													
1.40													
2.00	0.60	-0.60	-0.39	0.30	0.21	0.06	0.04	0.09	0.06	0	0	-0.59	-0.000003
4.00	2.60	-2.60	-1.69	1.30	0.92	0.28	0.18	0.37	0.24	0	0	-2.57	-0.000013
6.00	4.60	-4.60	-2.99	2.30	1.63	0.49	0.32	0.66	0.43	0	0	-4.55	-0.000024
8.00	6.60	-6.60	-4.29	3.30	2.34	0.71	0.46	0.94	0.61	0	0	-6.53	-0.000034
(BLM Sect. 3) (Sect. 15 is similar to USFS)/10													
				Rangeland improvement (50%)		Local government (12.5%)				Federal treasury (37.5%)			
1.40													
2.00	0.60	-0.60	-0.39	0.30	0.21	0.03	0.02	0.04	0.03	0	0	-0.69	-0.000008
4.00	2.60	-2.60	-1.69	1.30	0.92	0.14	0.09	0.19	0.12	0	0	-2.97	-0.000034
6.00	4.60	-4.60	-2.99	2.30	1.63	0.25	0.16	0.33	0.21	0	0	-5.26	-0.000060
8.00	6.60	-6.60	-4.29	3.30	2.34	0.35	0.23	0.47	0.31	0	0	-7.54	-0.000086
Distributions stay the same; all increases go to the Federal Treasury (USFS and BLM)/8													
1.40													
2.00	0.60	-0.60	-0.39									-0.99	-0.000025
4.00	2.60	-2.60	-1.69									-4.29	-0.000110
6.00	4.60	-4.60	-2.99									-7.59	-0.000195
8.00	6.60	-6.60	-4.29									-10.89	-0.000279
0.65	Peru Cons In												
0.71	Range Imp In												
0.65	Local Govt In												
0.00004230	Peru Cons Emp												
0.00004280	Range Imp Emp												
0.00003880	Local Govt Emp												

Table 2. Estimated local community personal income and local employment impact of grazing fee increases, Gunnison County, Colorado. Assumes no decrease in grazing on federal lands. /9

Grazing fee/2	Grazing fee increase	Total USFS AUM's/11	USFS local personal income impacts/12	Total USFS local employment impact/12	Total BLM AUM's/11	Local personal income impacts/12	Total BLM local employment impact/12	Total federal grazing fee increase impact		Percent income decrease in the local economy/13	Total federal grazing fee impact when all increases go to the Federal Treasury		Forecast Decrease in local economy/13
								Local personal income	Local employment		Local personal income	Local employment	
1.40													
2.00	0.60	79525.00	-47237.85	-0.25	38985.00	-26724.22	-0.30	-73962.07	-0.55	-0.10	-117324.90	-3.01	-0.165554
4.00	2.60	79525.00	-204697.35	-1.07	38985.00	-115804.94	-1.32	-320502.29	-2.39	-0.45	-508407.90	-13.03	-0.17401
6.00	4.60	79525.00	-362156.85	-1.89	38985.00	-204885.67	-2.33	-567042.52	-4.22	-0.80	-899490.90	-23.06	-1.69247
8.00	6.60	79525.00	-519616.35	-2.71	38985.00	-293966.39	-3.35	-813582.74	-6.06	-1.15	-1290573.90	-33.09	-1.821094

79525 USFS AUM's
38985 BLM/AUM's
70868070 County Inc.

Table 3. Estimated local community personal income and local employment impact of grazing fee increases (decrease in grazing in response to fee increases), /14 Gunnison County, Colorado.

Grazing fee	Grazing fee increase	Total USFS AUM's/11	Negative response to fee increase on use of Federal AUM's/14	Decrease in use of public grazing in AUM's	Negative impact on local personal income/15*	Negative impact on local employment	Total BLM AUM's	Negative response to fee increase or Federal AUM's/14	Decrease in use of BLM land AUM's	Negative impact on local personal income	Negative impact on local employment	Total Federal grazing fee effect (decreased use)	Local personal income	Local employment
1.40														
2.00	0.60	79525.00	-0.04	-3181.00	-34259.37	-0.52	38985.00	-0.04	-1559.40	-16794.74	-0.25	-51054.11	-0.772685	
4.00	2.60	79525.00	-0.17	-13519.25	-145602.32	-2.20	38985.00	-0.17	-6627.45	-71377.64	-1.08	-216979.96	-3.283912	
6.00	4.60	79525.00	-0.30	-23857.50	-256945.28	-3.89	38985.00	-0.30	-11695.50	-125960.54	-1.91	-382905.81	-5.795139	
8.00	6.60	79525.00	-0.43	-34195.75	-368288.23	-5.57	38985.00	-0.43	-16763.55	-180543.63	-2.73	-548831.66	-8.306366	

*This was treated as a decrease in total expenditures on ranch related items less the amount that is purchased by the Livestock Sector from the Feed and Grazing Sector. The per AUM expenditure was calculated using the total receipts per AUM for the area. Total receipts per public grazing unit are \$15.95 (1977 dollars), based on Kerry Gee's ranch budgets, Economic Research Service, Colorado State University, Fort Collins, Colorado. A decrease in final demand in the ranching sector results in a decrease of \$10.77 of local personal income for a public grazing AUM. The corresponding local employment decrease is .000163 per AUM for public grazing.

15.95 Receipts AUM
10.77 Pers Inc - AUM
0.000163 Emp - AUM

Table 4. Estimated local community personal income and local employment impact of grazing fee increases (decreased grazing and reduced ranchers' income impact), Gunnison County, Colorado.

Grazing fee/3	Grazing fee increase	USFS		BLM		Total Federal impact of Federal grazing fee increase (decreased income)		Combined effect of decreased use & decreased income due to higher fees/18		Percent decrease in local economy/13
		Total local income lost due to fee increase/16	Total local employment lost due to fee increase/16	Total local income lost due to fee increase/16	Total local employment lost due to fee increase/16	Personal income/17	Local employment/17	Local personal income	Local employment	
1.40										
2.00	0.60	-45348.34	-0.24	-25655.25	-0.29	-71003.58	-0.53	-122057.69	-0.77	-0.17
4.00	2.60	-169898.80	-0.89	-96118.10	-1.09	-266016.90	-1.98	-482996.86	-3.28	-0.68
6.00	4.60	-253509.79	-1.32	-143419.97	-1.63	-396929.76	-2.96	-779835.57	-5.80	-1.10
8.00	6.60	-296181.37	-1.55	-167560.04	-1.91	-463742.16	-3.45	-1012573.82	-8.31	-1.43

Table 1. Estimated local community personal income and local employment impact of grazing fee increases (per AUM) Owyhee County, Idaho, I-O model (USFS IMPLAN). /1

Grazing fee/2	Grazing fee increase	Decrease in ranchers income/3	Community impact/4	Rangeland improvement fund/5 (50%)		Local government (25%)				Federal treasury (25%)				Total local personal income impact/7	Total local employment impact/7
				Improvement fund	Community impact/6	Local government expenditure	Community income impact	Local government salaries	Community income impact	Local expenditure	Community income impact				
-----USFS-----															
1.40															
2.00	0.60	-0.60	-0.25	0.30	0.17	0.06	0.03	0.09	0.04	0	0	0	-0.53	0.000002	
4.00	2.60	-2.60	-1.09	1.30	0.74	0.28	0.15	0.37	0.16	0	0	0	-2.28	0.000007	
6.00	4.60	-4.60	-1.93	2.30	1.31	0.49	0.26	0.66	0.28	0	0	0	-4.03	0.000012	
7.98	6.58	-6.30	-2.65	3.29	1.88	0.71	0.37	0.94	0.39	0	0	0	-5.37	0.000024	

(BLM Sect. 3) (Sect. 15 is similar to USFS)/10
Rangeland improvement (50%) Local government (12.5%) Federal treasury (37.5%)

1.40													
2.00	0.60	-0.60	-0.25	0.30	0.17	0.03	0.02	0.04	0.02	0	0	-0.60	-0.000001
4.00	2.60	-2.60	-1.09	1.30	0.74	0.14	0.07	0.19	0.08	0	0	-2.62	-0.000005
6.00	4.60	-4.60	-1.93	2.30	1.31	0.25	0.13	0.33	0.14	0	0	-4.63	-0.000009
7.98	6.58	-6.58	-2.76	3.29	1.88	0.35	0.18	0.47	0.20	0	0	-6.62	-0.000013

Distributions stay the same; all increases go to the Federal Treasury (USFS and BLM)/8

1.40													
2.00	0.60	-0.60	-0.25									-0.85	-0.000016
4.00	2.60	-2.60	-1.09									-3.69	-0.000068
6.00	4.60	-4.60	-1.93									-6.53	-0.000121
7.98	6.58	-6.58	-2.76									-9.34	-0.000173

99

0.42 Pers Cons In
0.57 Range Imp In
0.52 Local Govt In
0.00002630 Pers Cons Emp
0.00003670 Range Imp Emp
0.00002700 Local Govt Emp

Table 2. Estimated local community personal income and local employment impact of grazing fee increases, Owyhee County, Idaho. Assumes no decrease in grazing on federal lands. /9

Grazing fee/2	Grazing fee increase	Total USFS AUM's/11	USFS local personal income impacts/12	Total USFS local employment impact/12	Total BLM AUM's/11	Local personal income impacts/12	Total BLM local employment impact/12	Total federal grazing fee increase impact		Percent income decrease in the local economy/13	Total federal grazing fee when all increases go to the Federal Treasury		Percent Decrease in local economy/13
								Local personal income	Local employment		Local personal income	Local employment	
1.40													
2.00	0.60	0	0	0	372322.00	-224705.64	-0.44	-224705.64	-0.44	-0.62	-317218.34	-5.88	-0.876135
4.00	2.60	0	0	0	372322.00	-973724.42	-1.90	-973724.42	-1.90	-2.69	-1374612.82	-25.46	-3.796587
6.00	4.60	0	0	0	372322.00	-1722743.20	-3.36	-1722743.20	-3.36	-4.76	-2432007.30	-45.04	-6.717038
7.98	6.58	0	0	0	372322.00	-2464271.80	-4.80	-2464271.80	-4.80	-6.81	-3478827.84	-64.43	-9.608285

0 USFS AUM's
372322 BLM/AUM's
36206544 County Inc.

Table 3. Estimated local community personal income and local employment impact of grazing fee increases (decrease in grazing in response to fee increases), /14 Owyhee County, Idaho.

Grazing fee	Grazing fee increase	Total USFS AUM's/11	Negative response to fee increase on use of Federal AUM's/14	Decrease in use of public grazing in AUM's	Negative impact on local personal income/15*	Negative impact on local employment	Total BLN AUM's	Negative response to fee increase or Federal AUM's/14	Decrease in use of BLN land AUM's	Negative impact on local personal income	Negative impact on local employment	Total Federal grazing fee effect (decreased use)	
												Local personal income	Local employment
1.40													
2.00	0.60	0	-0.05	0	0	0	372322.00	-0.05	-18616.10	-205521.74	-5.73	-205521.74	-5.733759
4.00	2.60	0	-0.20	0	0	0	372322.00	-0.20	-74464.40	-822086.98	-22.94	-822086.98	-22.935035
6.00	4.60	0	-0.35	0	0	0	372322.00	-0.35	-130312.70	-1438652.21	-40.14	-1438652.21	-40.136312
7.98	6.58	0	-0.50	0	0	0	372322.00	-0.50	-186161.00	-2055217.44	-57.34	-2055217.44	-57.337588

*This was treated as a decrease in total expenditures on ranch related items less the amount that is purchased by the Livestock Sector from the Feed and Grazing Sector. The per AUM expenditure was calculated using the total receipts per AUM for the area. Total receipts per public grazing unit are \$18.23 (1977 dollars), based on Kerry Gee's ranch budgets, Economic Research Service, Colorado State University, Fort Collins, Colorado. A decrease in final demand in the ranching sector results in a decrease of \$11.04 of local personal income for a public grazing AUM. The corresponding local employment decrease is .000308 per AUM for public grazing.

18.23 Receipts AUM
11.04 Pers Inc - AUM
0.000308 Emp - AUM

Table 4. Estimated local community personal income and local employment impact of grazing fee increases (decreased grazing and reduced ranchers' income impact), Owyhee County, Idaho.

Grazing fee/3	Grazing fee increase	VITA		BLM		Total Federal Impact of Federal grazing fee increase (decreased income)		Combined effect of decreased use & decreased income due to higher fees/18		Percent income decrease in local economy/13
		Total local income lost due to fee increase/16	Total local employment lost due to fee increase/16	Total local income lost due to fee increase/16	Total local employment lost due to fee increase/16	Personal income/17	LOST employment/17	Local personal income	Local employment	
1.40		0	0	-213470.35	-0.42	-213470.35	-0.42	-418992.10	-5.73	-1.16
2.00	0.60	0	0	-778979.53	-1.52	-778979.53	-1.52	-1601046.51	-22.94	-4.42
4.00	2.60	0	0	-1119783.08	-2.18	-1119783.08	-2.18	-2558435.29	-40.14	-7.07
6.00	4.60	0	0	-1232135.90	-2.40	-1232135.90	-2.40	-3287353.34	-57.34	-9.08
7.98	6.58	0	0							

Table 1. Estimated local community personal income and local employment impact of grazing fee increases (per AUM) Beaverhead County, Montana, I-O model (USFS IMPLAN). /1

Grazing fee/2	Grazing fee increase	Decrease in ranchers income/3	Community impact/4	Rangeland improvement fund/5 (50%)		Local government (25%)				Federal treasury (25%)			
				Improvement fund	Community impact/6	Local government expenditure	Community income impact	Local government salaries	Community income impact	Local expenditure	Community income impact	Total local personal income impact/7	Total local employment impact/7
-----USFS-----													
1.40													
2.00	0.60	-0.60	-0.40	0.30	0.20	0.06	0.04	0.09	0.06	0	0	-0.62	-0.000005
4.00	2.60	-2.60	-1.74	1.30	0.86	0.28	0.19	0.37	0.23	0	0	-2.68	-0.000020
6.00	4.60	-4.60	-3.08	2.30	1.52	0.49	0.33	0.66	0.44	0	0	-4.74	-0.000033
8.00	6.60	-6.60	-4.42	3.30	2.18	0.71	0.48	0.94	0.63	0	0	-6.80	-0.000050
(BLM Sect. 3) (Sect. 15 is similar to USFS)/10													
				Rangeland improvement (50%)		Local government (12.5%)				Federal treasury (37.5%)			
1.40													
2.00	0.60	-0.60	-0.40	0.30	0.20	0.03	0.02	0.04	0.03	0	0	-0.71	-0.000010
4.00	2.60	-2.60	-1.74	1.30	0.86	0.14	0.09	0.19	0.12	0	0	-3.08	-0.000042
6.00	4.60	-4.60	-3.08	2.30	1.52	0.25	0.17	0.33	0.22	0	0	-5.45	-0.000074
8.00	6.60	-6.60	-4.42	3.30	2.18	0.35	0.24	0.47	0.32	0	0	-7.82	-0.000106
Distributions stay the same; all increases go to the Federal Treasury (USFS and BLM)/8													
1.40													
2.00	0.60	-0.60	-0.40									-1.00	-0.000027
4.00	2.60	-2.60	-1.74									-4.34	-0.000116
6.00	4.60	-4.60	-3.08									-7.68	-0.000206
8.00	6.60	-6.60	-4.42									-11.02	-0.000293

0.67 Pers Cons In
0.66 Range Imp In
0.67 Local Govt In
0.00004470 Pers Cons Emp
0.00004150 Range Imp Emp
0.00004000 Local Govt Emp

Table 2. Estimated local community personal income and local employment impact of grazing fee increases, Beaverhead County, Montana. Assumes no decrease in grazing on federal lands. /9

Grazing fee/2	Grazing fee increase	Total USPS AUM's/11	USPS local personal income impacts/12	Total USPS local employment impacts/12	Total BLM AUM's/11	Local personal income impacts/12	Total BLM local employment impacts/12	Total federal grazing fee increase impact		Percent income decrease in the local economy/13	Total federal grazing fee impact when all increases go to the Federal Treasury		
								Local personal income	Local employment		Local personal income	Local employment	Percent Decrease in local economy/13
1.40													
2.00	0.60	89287.00	-55179.37	-0.41	86472.00	-61481.59	-0.83	-116660.96	-1.24	-0.24	-176110.52	-4.71	-0.161634
4.00	2.60	89287.00	-239110.59	-1.76	86472.00	-266420.23	-3.60	-505530.82	-5.36	-1.04	-763145.58	-20.43	-1.367082
6.00	4.60	89287.00	-423041.81	-3.11	86472.00	-471358.87	-6.36	-894400.68	-9.47	-1.84	-1350180.64	-36.14	-2.772529
8.00	6.60	89287.00	-606973.03	-4.47	86472.00	-676297.51	-9.13	-1283270.54	-13.59	-2.64	-1937215.70	-51.85	-3.977977

89287 USPS AUM's
86472 BLM/AUM's
48698514 County Inc.

Table 3. Estimated local community personal income and local employment impact of grazing fee increases (decrease in grazing in response to fee increases), /14 Beaverhead County, Montana.

Grazing fee	Grazing fee increase	Total USFS AUM's/11	Negative response to fee increase on use of Federal AUM's/14	Decrease in use of public grazing in AUM's	Negative impact on local personal income/15	Negative impact on local employment	Total BLM AUM's	Negative response to fee increase or Federal AUM's/14	Decrease in use of BLM land AUM's	Negative impact on local personal income	Negative impact on local employment	Total Federal grazing fee effect (decreased use)	
												Local personal income	Local employment
1.40													
2.00	0.60	89287.00	-0.04	-3571.48	-36964.82	-1.12	86472.00	-0.04	-3458.88	-35799.41	-1.08	-72764.23	-2.100503
4.00	2.60	89287.00	-0.17	-15178.79	-157100.48	-4.75	86472.00	-0.17	-14700.24	-152147.48	-4.60	-309247.96	-9.352136
6.00	4.60	89287.00	-0.31	-27678.97	-286477.34	-8.66	86472.00	-0.31	-26806.32	-277445.41	-8.39	-563922.75	-17.653896
8.00	6.60	89287.00	-0.44	-39286.28	-406613.00	-12.30	86472.00	-0.44	-38047.68	-393793.49	-11.91	-800406.49	-24.205530

*This was treated as a decrease in total expenditures on ranch related items less the amount that is purchased by the Livestock Sector from the Feed and Grazing Sector. The per AUM expenditure was calculated using the total receipts per AUM for the area. Total receipts per public grazing unit are \$19.06 (1977 dollars), based on Kerry Gee's ranch budgets, Economic Research Service, Colorado State University, Fort Collins, Colorado. A decrease in final demand in the ranching sector results in a decrease of \$10.35 personal income for a public grazing AUM. The corresponding local employment decrease is .000313 per AUM for public grazing.

19.06 Receipts AUM
10.35 Pers Inc - AUM
0.000313 Emp - AUM

Table 4. Estimated local community personal income and local employment impact of grazing fee increases (decreased grazing and reduced ranchers' income impact), Beaverhead County, Montana.

Grazing fee/3	Grazing fee increase	USFS		BLM		Total Federal impact of Federal grazing fee increase (decreased income)		Combined effect of de- creased use & decreased income due to higher fees/18		Percent Income decrease in local economy/13
		Total local income lost due to fee increase/16	Total local employment lost due to fee increase/16	Total local income lost due to fee increase/16	Total local employment lost due to fee increase/16	Personal	Local	Local personal income	Local employment	
						income/17	employmt/17			
1.40										
2.00	0.60	-32972.19	-0.39	-59022.33	-0.80	-111994.52	-1.19	-184758.75	-2.20	-0.38
4.00	2.60	-198461.79	-1.46	-321128.79	-2.98	-419590.58	-4.44	-728838.54	-9.35	-1.50
6.00	4.60	-291898.85	-2.15	-325237.62	-4.39	-617136.47	-6.54	-1181059.22	-17.05	-2.43
8.00	6.60	-339904.89	-2.50	-378726.61	-5.11	-718631.50	-7.61	-1519037.99	-24.21	-3.12

Table 1. Estimated local community personal income and local employment impact of grazing fee increases (per AUM) Elko County, Nevada, I-0 model (USFS IMPLAN). /1

Grazing fee/2	Grazing fee increase	Decrease in ranchers income/3	Community impact/4	Rangeland improvement fund/5 (50%)		Local government (25%)				Federal treasury (25%)				Total local personal income impact/7	Total local employment impact/7
				Improvement fund	Community impact/6	Local government expenditure	Community income impact	Local government salaries	Community income impact	Local expenditure	Community income impact				
-----USFS-----															
1.40															
2.00	0.60	-0.60	-0.41	0.30	0.21	0.06	0.05	0.09	0.06	0	0	0	-0.61	-0.000002	
4.00	2.60	-2.60	-1.77	1.30	0.90	0.28	0.21	0.37	0.25	0	0	0	-2.64	-0.000009	
5.70	4.30	-4.30	-2.92	2.15	1.48	0.46	0.34	0.61	0.42	0	0	0	-4.37	-0.000015	
(BLM Sect. 3) (Sect. 15 is similar to USFS)/10															
				Rangeland improvement (50%)		Local government (12.5%)				Federal treasury (37.5%)					
1.40															
2.00	0.60	-0.60	-0.41	0.30	0.21	0.03	0.02	0.04	0.03	0	0	0	-0.71	-0.000006	
4.00	2.60	-2.60	-1.77	1.30	0.90	0.14	0.10	0.19	0.13	0	0	0	-3.06	-0.000027	
5.70	4.30	-4.30	-2.92	2.15	1.48	0.23	0.17	0.31	0.21	0	0	0	-5.05	-0.000045	
Distributions stay the same; all increases go to the Federal Treasury (USFS and BLM)/8															
1.40															
2.00	0.60	-0.60	-0.41										-1.01	-0.000022	
4.00	2.60	-2.60	-1.77										-4.37	-0.000094	
5.70	4.30	-4.30	-2.92										-7.22	-0.000156	

0.68 Pers Cons In
0.69 Range Imp In
0.74 Local Govt In
0.00003620 Pers Cons Exp
0.00003740 Range Imp Exp
0.00003540 Local Govt Exp

Table 2. Estimated local community personal income and local employment impact of grazing fee increases, Elko County, Nevada. Assumes no decrease in grazing on federal lands. /9

Grazing fee/2	Grazing fee increase	Total USFS AUM's/11	USFS local personal income impacts/12	Total USFS local employment impact/12	Total BLM AUM's/11	Local personal income impacts/12	Total BLM local employment impact/12	Total federal grazing fee increase impact		Percent income decrease in the local economy/13	Total federal grazing fee impact when all increases go to the Federal Treasury		Percent Decrease in local economy/13
								Local personal income	Local employment		Local personal income	Local employment	
1.40													
2.00	0.60	78801.00	-48039.45	-0.17	67482.00	-47596.07	-0.42	-95635.52	-0.59	-0.08	-147453.26	-3.18	-0.117563
4.00	2.60	78801.00	-208170.97	-0.72	67482.00	-206249.62	-1.83	-414420.59	-2.54	-0.33	-638964.14	-13.77	-0.509440
5.70	4.30	78801.00	-344282.75	-1.18	67482.00	-341105.15	-3.02	-685387.90	-4.20	-0.55	-1056748.39	-22.77	-0.842536

78801 USFS AUM's
67482 BLM/AUM's
125424740 County Inc.

Table 3. Estimated local community personal income and local employment impact of grazing fee increases (decrease in grazing in response to fee increases), /14 Elko County, Nevada.

Grazing fee	Grazing fee increase	Total USFS AUM's/11	Negative response to fee increase on use of Federal AUM's/14	Decrease in use of public grazing in AUM's	Negative impact on local personal income/15*	Negative impact on local employment	Total BLM AUM's	Negative response to fee increase or Federal AUM's/14	Decrease in use of BLM land AUM's	Negative impact on local personal income	Negative impact on local employment	Total Federal grazing fee effect (decreased use) Local personal income	Local employment
1.40													
2.00	0.60	78801.00	-0.07	-5516.07	-59187.43	-1.57	67482.00	-0.07	-4723.74	-50685.73	-1.35	-109873.16	-2.918346
4.00	2.60	78801.00	-0.30	-23640.30	-253660.42	-6.74	67482.00	-0.30	-20244.60	-217224.56	-5.77	-470884.98	-12.507197
5.70	4.30	78801.00	-0.50	-39400.50	-422767.37	-11.23	67482.00	-0.50	-33741.00	-362040.93	-9.62	-784808.30	-20.845328

*This was treated as a decrease in total expenditures on ranch related items less the amount that is purchased by the Livestock Sector from the Feed and Grazing Sector. The per AUM expenditure was calculated using the total receipts per AUM for the area. Total receipts per public grazing unit are \$18.23 (1977 dollars), based on Kerry Gee's ranch budgets, Economic Research Service, Colorado State University, Fort Collins, Colorado. A decrease in final demand in the ranching sector results in a decrease of \$10.73 of local personal income for a public grazing AUM. The corresponding local employment decrease is .000285 per AUM for public grazing.

18.23 Receipts AUM
10.73 Pers Inc - AUM
0.000285 Emp - AUM

Table 4. Estimated local community personal income and local employment impact of grazing fee increases (decreased grazing and reduced ranchers' income impact), Elko County, Nevada.

Grazing fee/3	Grazing fee increase	USFS		BLM		Total Federal impact of Federal grazing fee increase (decreased income)		Combined effect of de- creased use & decreased income due to higher fees/16		Percent Income decrease in local economy/13
		Total local income lost due to fee increase/16	Total local employment lost due to fee increase/16	Total local income lost due to fee increase/16	Total local employment lost due to fee increase/16	Personal	Local	Local personal income	Local employment	
						income/17	employmt/17			
1.40										
2.00	0.60	-44676.69	-0.15	-44264.34	-0.39	88941.03	-0.55	-198814.20	-2.92	-0.16
4.00	2.60	-145719.68	-0.30	-144374.74	-1.28	-290094.41	-1.78	-760979.39	-12.51	-0.61
5.70	4.30	-172141.38	-0.59	-170552.57	-1.51	-342693.95	-2.10	-1127502.24	-20.85	-0.90

Table 1. Estimated local community personal income and local employment impact of grazing fee increases (per AUM) Catron County, New Mexico, I-O model (USFS IMPLAN). /1

Grazing fee/2	Grazing fee increase	Decrease in ranchers income/3	Community impact/4	Rangeland improvement fund/5 (50%)		Local government (25%)				Federal treasury (25%)			Total local personal income impact/7	Total local employment impact/7
				Improvement fund	Community impact/6	Local government expenditure	Community income impact	Local government salaries	Community income impact	Local expenditure	Community income impact			
-----USFS-----														
1.40														
2.00	0.60	-0.60	-0.19	0.30	0.23	0.06	0.02	0.09	0.03	0	0	-0.42	0.000012	
4.00	2.60	-2.60	-0.81	1.30	0.99	0.28	0.10	0.37	0.11	0	0	-1.03	0.000052	
6.00	4.60	-4.60	-1.43	2.30	1.75	0.49	0.18	0.66	0.20	0	0	-3.24	0.000092	
6.26	4.86	-4.86	-1.51	2.43	1.85	0.52	0.19	0.69	0.21	0	0	-3.42	0.000097	
(BLM Sect. 3) (Sect. 15 is similar to USFS)/10														
				Rangeland improvement (50%)		Local government (12.5%)				Federal treasury (37.5%)				
1.40														
2.00	0.60	-0.60	-0.19	0.30	0.23	0.03	0.01	0.04	0.01	0	0	-0.49	0.000011	
4.00	2.60	-2.60	-0.81	1.30	0.99	0.14	0.05	0.19	0.06	0	0	-2.13	0.000046	
6.00	4.60	-4.60	-1.43	2.30	1.75	0.25	0.09	0.33	0.10	0	0	-3.76	0.000081	
6.26	4.86	-4.86	-1.51	2.43	1.85	0.26	0.09	0.35	0.11	0	0	-3.97	0.000086	
Distributions stay the same; all increases go to the Federal Treasury (USFS and BLM)/8														
1.40														
2.00	0.60	-0.60	-0.19									-0.79	-0.000012	
4.00	2.60	-2.60	-0.81									-3.41	-0.000051	
6.00	4.60	-4.60	-1.43									-6.03	-0.000090	
6.26	4.86	-4.86	-1.51									-6.37	-0.000095	

0.31 Pers Cons In
0.76 Range Imp In
0.36 Local Govt In
0.00001950 Pers Cons Emp
0.00005830 Range Imp Emp
0.00001040 Local Govt Emp

Table 2. Estimated local community personal income and local employment impact of grazing fee increases, Catron County, New Mexico. Assumes no decrease in grazing on federal lands. /9

Grazing fee/2	Grazing fee increase	Total USFS AUM's/11	USFS local personal income impacts/12	Total USFS local employment impact/12	Total BLM AUM's/11	Local personal income impacts/12	Total BLM local employment impact/12	Total federal grazing fee increase impact		Percent Income decrease in the local economy/13	Total federal grazing fee impact when all increases go to the Federal Treasury		Percent Decrease in local economy/13
								Local personal income	Local employment		Local personal income	Local employment	
1.40								-117027.95	3.00	-0.92	-205461.97	-3.06	-1.608892
2.00	0.60	165063.00	-69784.51	1.98	96339.00	-47243.44	1.02	-507121.12	13.01	-3.97	-890335.21	-13.25	-6.971866
4.00	2.60	165063.00	-302399.54	8.60	96339.00	-204721.58	4.41	-897214.29	23.01	-7.03	-1575208.45	-23.45	-12.334840
6.00	4.60	165063.00	-535014.58	15.21	96339.00	-362199.72	7.80	-947926.40	24.31	-7.42	-1664241.97	-24.77	-13.037027
6.26	4.86	165063.00	-565254.53	16.07	96339.00	-382671.88	8.24						

165063 USFS AUM's
96339 BLM/AUM's
12770400 County Inc.

Table 3. Estimated local community personal income and local employment impact of grazing fee increases (decrease in grazing in response to fee increases), /14 Catron County, New Mexico.

Grazing fee	Grazing fee increase	Total USFS AUM's/11	Negative response to fee increase on use of Federal AUM's/14	Decrease in use of public grazing in AUM's	Negative impact on local personal income/15*	Negative impact on local employment	Total BLM AUM's	Negative response to fee increase or Federal AUM's/14	Decrease in use of BLM land AUM's	Negative impact on local personal income	Negative impact on local employment	Total Federal grazing fee effect (decreased use)	
												LOCAL personal income	Local employment
1.40													
	0.60	165063.00	-0.06	-9903.78	-49320.82	-1.27	96339.00	-0.06	-5780.34	-28786.09	-0.74	-78106.92	-2.007567
4.00	2.60	165063.00	-0.27	-44567.01	-221943.71	-5.70	96339.00	-0.27	-26011.53	-129537.42	-3.33	-351481.13	-9.034053
6.00	4.60	165063.00	-0.47	-77579.61	-386346.46	-9.93	96339.00	-0.47	-45279.33	-225491.06	-5.80	-611837.32	-15.723945
6.26	4.86	165063.00	-0.50	-82531.50	-411006.87	-10.56	96339.00	-0.50	-48169.50	-239884.11	-6.17	-650890.98	-16.729728

*This was treated as a decrease in total expenditures on ranch related items less the amount that is purchased by the Livestock Sector from the Feed and Grazing Sector. The per AUM expenditure was calculated using the total receipts per AUM for the area. Total receipts per public grazing unit are \$12.41 (1977 dollars), based on Kerry Gee's ranch budgets, Economic Research Service, Colorado State University, Fort Collins, Colorado. A decrease in final demand in the ranching sector results in a decrease of \$4.98 of local personal income for a public grazing AUM. The corresponding local employment decrease is .000128 per AUM for public grazing.

12.41 Receipts AUM
4.98 Pers Inc - AUM
0.000128 Emp - AUM

Table 4. Estimated local community personal income and local employment impact of grazing fee increases (decreased grazing and reduced ranchers' income impact), Catron County, New Mexico.

Grazing fee/3	Grazing fee increase	USFS		BLM		Total Federal impact of Federal grazing fee increase (decreased income)		Combined effect of decreased use & decreased income due to higher fees/18		Percent income decrease in local economy/13
		Total local income lost due to fee increase/16	Total local employment lost due to fee increase/16	Total local income lost due to fee increase/16	Total local employment lost due to fee increase/16	Personal income/17	Local employment/17	Local personal income	Local employment	
1.40										
2.00	0.60	-45597.44	1.86	-44408.83	0.96	-110006.27	2.02	-188113.19	-2.01	-1.47
4.00	2.60	-220731.67	6.27	-149446.75	3.22	-370198.42	9.49	-721679.55	-9.03	-5.65
6.00	4.60	-283557.72	8.06	-191965.85	4.13	-475523.57	12.19	-1087361.10	-15.73	-8.51
8.26	4.86	-282627.26	8.03	-191335.94	4.12	-473963.20	12.15	-1124854.16	-16.73	-8.81

Table 1. Estimated local community personal income and local employment impact of grazing fee increases (per AUM) Billings County, North Dakota, I-O model (USFS IMPLAN). /1

Grazing fee/2	Grazing fee increase	Decrease in ranchers income/3	Community impact/4	Rangeland improvement fund/5 (50%)		Local government (25%)			Federal treasury (25%)			Total local personal income impact/7	Total local employment impact/7
				Improvement fund	Community impact/6	Local government expenditure	Community income impact	Local government salaries	Community income impact	Local expenditure	Community income impact		
-----USFS-----													
2.86													
4.00	1.14	-1.14	-0.29	0.57	0.29	0.12	0.03	0.16	0.04	0	0	-0.90	0.000012
6.00	3.14	-3.14	-0.79	1.57	0.79	0.34	0.09	0.45	0.11	0	0	-2.49	0.000033
8.00	5.14	-5.14	-1.29	2.57	1.29	0.55	0.15	0.73	0.18	0	0	-4.08	0.000054
(BLM Sect. 3) (Sect. 15 is similar to USFS)/10													
				Rangeland improvement (50%)		Local government (12.5%)			Federal treasury (37.5%)				
2.86													
4.00	1.14	-1.14	-0.29	0.57	0.29	0.06	0.02	0.08	0.02	0	0	-1.02	0.000009
6.00	3.14	-3.14	-0.79	1.57	0.79	0.17	0.05	0.22	0.06	0	0	-2.81	0.000026
8.00	5.14	-5.14	-1.29	2.57	1.29	0.28	0.07	0.37	0.09	0	0	-4.61	0.000043
Distributions stay the same; all increases go to the Federal Treasury (USFS and BLM)/8													
2.86													
4.00	1.14	-1.14	-0.29									-1.43	-0.000022
6.00	3.14	-3.14	-0.79									-3.93	-0.000061
8.00	5.14	-5.14	-1.29									-6.43	-0.000100

0.25 Pers Cons In
0.50 Range Imp In
0.27 Local Govt In
0.00001950 Pers Cons Emp
0.00004420 Range Imp Emp
0.00002050 Local Govt Emp

Table 2. Estimated local community personal income and local employment impact of grazing fee increases, Billings County, North Dakota. Assumes no decrease in grazing on federal lands. /9

Grazing fee/2	Grazing fee increase	Total USFS AUM's/11	USFS local personal income impacts/12	Total USFS local employment impact/12	Total BLM AUM's/11	Local personal income impacts/12	Total BLM local employment impact/12	Total federal grazing fee increase impact		Percent income decrease in the local economy/13	Total federal grazing fee impact when all increases go to the Federal Treasury		Percent Decrease in local economy/13	
								Local personal income	Local employment		Local personal income	Local employment		
2.86						0	0	0	-110746.91	1.47	-1.20	-174602.40	-2.72	-1.896433
4.00	1.14	122528.00	-110746.81	1.47		0	0	0	-305039.46	4.04	-3.30	-480922.40	-7.50	-5.207037
6.00	3.14	122528.00	-305039.46	4.04		0	0	0	-499332.11	6.62	-5.41	-787242.40	-12.28	-8.523622
8.00	5.14	122528.00	-499332.11	6.62										

122528 USFS AUM's
0 BLM/AUM's
9236008 County Inc.

Table 3. Estimated local community personal income and local employment impact of grazing fee increases (decrease in grazing in response to fee increases), /14 Billings County, North Dakota.

Grazing fee	Grazing fee increase	Total USFS AUM's/11	Negative response to fee increase on use of Federal AUM's/14	Decrease in use of public grazing in AUM's	Negative impact on local personal income/15*	Negative impact on local employment	Total BLM AUM's	Negative response to fee increase or Federal AUM's/14	Decrease in use of BLM land AUM's	Negative impact on local personal income	Negative impact on local employment	Total Federal grazing fee effect (decreased use)	
												Local personal income	Local employment
2.86													
4.00	1.14	122528.00	-0.10	-12252.80	-74619.55	-1.73	0	-0.10	0	0	0	-74619.55	-1.727645
6.00	3.14	122528.00	-0.29	-35533.12	-216396.70	-5.01	0	-0.29	0	0	0	-216396.70	-5.010 70
8.00	5.14	122528.00	-0.47	-57588.16	-350711.89	-8.12	0	-0.47	0	0	0	-350711.89	-8.119131

*This was treated as a decrease in total expenditures on ranch related items less the amount that is purchased by the Livestock Sector from the Feed and Grazing Sector. The per AUM expenditure was calculated using the total receipts per AUM for the area. Total receipts per public grazing unit are \$12.08 (1977 dollars) based on Kerry Gee's ranch budgets, Economic Research Service, Colorado State University, Fort Collins, Colorado. A decrease in final demand in the ranching sector results in a decrease of \$6.09 of local personal income for a public grazing AUM. The corresponding local employment decrease is .000141 per AUM for public grazing.

12.08 Receipts AUM

6.09 Pers Inc - AUM

0.000141 Emp - AUM

Table 4. Estimated local community personal income and local employment impact of grazing fee increases (decreased grazing and reduced ranchers' income impact), Billings County, North Dakota.

Grazing fee/3	Grazing fee increase	USFS		BLM		Total Federal impact of Federal grazing fee increase (decreased income)		Combined effect of de- creased use & decreased income due to higher fees/18		Percent Income decrease in local economy/13
		Total local income lost due to fee increase/16	Total local employment lost due to fee increase/16	Total local income lost due to fee increase/16	Total local employment lost due to fee increase/16	Personal income/17	Local employt/17	Local personal income	Local employment	
2.86				0	0	-99672.13	1.32	-174291.68	-1.73	-1.89
4.00	1.14	-99672.13	1.32	0	0	-216378.02	2.87	-432974.72	-5.01	-4.69
6.00	3.14	-216378.02	2.87	0	0	-264646.02	3.51	-615357.91	-8.12	-6.66
8.00	5.14	-264646.02	3.51							

Table 1. Estimated local community personal income and local employment impact of grazing fee increases (per AUM) Harney County, Oregon, I-O model (USFS IMPLAN). /1

Grazing fee/2	Grazing fee increase	Decrease in ranchers income/3	Community impact/4	Rangeland improvement fund/5 (50X)		Local government (25X)				Federal treasury (25X)			Total local personal income impact/7	Total local employment impact/7
				Improvement fund	Community impact/6	Local government expenditure	Community income impact	Local government salaries	Community income impact	Local expenditure	Community income impact			
-----USFS-----														
1.40														
2.00	0.60	-0.60	-0.39	0.30	0.18	0.06	0.05	0.09	0.06	0	0	-0.62	-0.000080	
4.00	2.60	-2.60	-1.69	1.30	0.78	0.28	0.20	0.37	0.24	0	0	-2.69	-0.000082	
6.00	4.60	-4.60	-2.99	2.30	1.38	0.49	0.36	0.66	0.43	0	0	-4.77	-0.000083	
7.70	6.30	-6.30	-4.10	3.15	1.89	0.68	0.49	0.90	0.58	0	0	-6.53	-0.000085	
(BLM Sect. 3) (Sect. 15 is similar to USFS)/10														
				Rangeland improvement (50X)		Local government (12.5X)				Federal treasury (37.5X)				
1.40														
2.00	0.60	-0.60	-0.39	0.30	0.18	0.03	0.02	0.04	0.03	0	0	-0.72	-0.000085	
4.00	2.60	-2.60	-1.69	1.30	0.78	0.14	0.10	0.19	0.12	0	0	-3.10	-0.000021	
6.00	4.60	-4.60	-2.99	2.30	1.38	0.25	0.18	0.33	0.21	0	0	-3.49	-0.000038	
7.70	6.30	-6.30	-4.10	3.15	1.89	0.34	0.25	0.45	0.29	0	0	-7.52	-0.000052	
Distributions stay the same; all increases go to the Federal treasury (USFS and BLM)/8														
1.40														
2.00	0.60	-0.60	-0.39									-0.99	-0.000020	
4.00	2.60	-2.60	-1.69									-4.29	-0.000088	
6.00	4.60	-4.60	-2.99									-7.59	-0.000156	
7.70	6.30	-6.30	-4.10									-10.40	-0.000214	

86

0.65 Pers Cons In
0.60 Range Imp In
0.73 Local Govt In
0.00003400 Pers Cons Exp
0.00003600 Range Imp Exp
0.00004160 Local Govt Exp

Table 2. Estimated local community personal income and local employment impact of grazing fee increases, Harney County, Oregon. Assumes no decrease in grazing on federal lands. /9

Grazing fee/2	Grazing fee increase	Total USFS AUM's/11	USFS local personal income impacts/12	Total USFS local employment impact/12	Total BLM AUM's/11	Local personal income impacts/12	Total BLM local employment impact/12	Total federal grazing fee increase impact		Percent income decrease in the local economy/13	Total federal grazing fee impact when all increases go to the Federal Treasury		Percent Decrease in local economy/13
								Local personal income	Local employment		Local personal income	Local employment	
1.40													
2.00	0.60	26855.00	-16699.31	-0.01	325299.00	-232888.06	-1.61	-249587.57	-1.62	-0.43	-348632.46	-7.18	-0.605817
4.00	2.60	26855.00	-72364.36	-0.05	325299.00	-1009181.59	-6.96	-1081546.15	-7.02	-1.88	-1510740.66	-31.13	-2.625206
6.00	4.60	26855.00	-128029.60	-0.09	325299.00	-1785475.13	-12.32	-1913504.73	-12.42	-3.33	-2672848.86	-55.08	-4.644595
7.70	6.30	26855.00	-175344.89	-0.13	325299.00	-2445324.63	-16.88	-2620669.52	-17.00	-4.55	-3660640.83	-75.43	-6.361376

26855 USFS AUM's
325299 BLM/AUM's
57547500 County Inc.

Table 3. Estimated local community personal income and local employment impact of grazing fee increases (decrease in grazing in response to fee increases), /14 Harney County, Oregon.

Grazing fee	Grazing fee increase	Total USFS AUM's/11	Negative response to fee increase on use of Federal AUM's/14	Decrease in use of public grazing in AUM's	Negative impact on local personal income/15*	Negative impact on local employment	Total BLM AUM's	Negative response to fee increase or Federal AUM's/14	Decrease in use of BLM land AUM's	Negative impact on local personal income	Negative impact on local employment	Total Federal grazing fee effect (decreased use)	
									Local personal income	Local employment			
1.40													
2.00	0.60	26855.00	-0.05	-1342.75	-15119.37	-0.37	325299.00	-0.05	-16264.95	-183143.34	-4.4*	-198262.70	-4.42110
4.00	2.60	26855.00	-0.19	-5102.45	-57453.59	-1.40	325299.00	-0.19	-61806.81	-695944.68	-17.00	-753398.27	-18.400047
6.00	4.60	26855.00	-0.35	-9399.25	-105835.56	-2.58	325299.00	-0.35	-113854.63	-1282003.36	-31.31	-1387838.91	-33.894623
7.70	6.30	26855.00	-0.50	-13427.50	-151193.65	-3.69	325299.00	-0.50	-162649.50	-1831433.37	-44.73	-1982627.02	-48.421175

*This was treated as a decrease in total expenditures on ranch related items less the amount that is purchased by the Livestock Sector from the Feed and Grazing Sector. The per AUM expenditure was calculated using the total receipts per AUM for the area. Total receipts per public grazing unit are \$18.23 (1977 dollars), based on Kerry Gee's ranch budgets, Economic Research Service, Colorado State University, Fort Collins, Colorado. A decrease in final demand in the ranching sector results in a decrease of \$11.26 of local personal income for a public grazing AUM. The corresponding local employment decrease is .000275 per AUM for public grazing.

18.23 Receipts AUM
11.26 Pers Inc - AUM
0.000275 Emp - AUM

Table 4. Estimated local community personal income and local employment impact of grazing fee increases (decreased grazing and reduced ranchers' income impact), Harney County, Oregon.

Grazing fee/3	Grazing fee increase	USFR		BLM		Total Federal impact of Federal grazing fee increase (decreased income)		Combined effect of decreased use & decreased income due to higher fees/18		Percent Income decrease in local economy/13
		Total local income lost due to fee increase/16	Total local employment lost due to fee increase/16	Total local income lost due to fee increase/16	Total local employment lost due to fee increase/16	Personal income/17	Local employment/17	Local personal income	Local employment	
1.40										
2.00	0.60	-15864.54	-0.01	-221243.66	-1.53	-237108.19	-1.54	-435370.90	-4.84	-0.76
4.00	2.60	-58615.29	-0.04	-817437.09	-5.64	-876052.38	-5.68	-1629450.65	-18.40	-2.83
6.00	4.60	-83219.24	-0.06	-1160558.83	-8.01	-1243778.07	-8.07	-2631616.99	-33.89	-4.57
7.70	6.30	-87672.44	-0.06	-1222662.32	-8.44	-1310334.76	-8.50	-3292961.78	-48.42	-5.72

Table 1. Estimated local community personal income and local employment impact of grazing fee increases (per AUM) Fall River County, South Dakota, I-O model (USFS IMPLAN). /1

Grazing fee/2	Grazing fee increase	Decrease in ranchers income/3	Community impact/4	Rangeland improvement fund/5 (50%)		Local government (25%)				Federal treasury (25%)		Total local personal income impact/7	Total local employment impact/7
				Improvement fund	Community impact/6	Local government expenditure	Community income impact	Local government salaries	Community income impact	Local expenditure	Community income impact		
-----USFS-----													
2.86													
4.00	1.14	-1.14	-0.68	0.57	0.31	0.12	0.07	0.16	0.10	0	0	-1.18	-0.000014
6.00	3.14	-3.14	-1.88	1.57	0.86	0.34	0.19	0.45	0.27	0	0	-3.26	-0.000039
8.00	5.14	-5.14	-3.08	2.57	1.41	0.55	0.31	0.73	0.44	0	0	-5.33	-0.000065
(BLM Sect. 3) (Sect. 15 is similar to USFS)/10													
				Rangeland improvement (50%)		Local government (12.5%)				Federal treasury (37.5%)			
2.86													
4.00	1.14	-1.14	-0.68	0.57	0.31	0.06	0.03	0.08	0.05	0	0	-1.35	-0.000024
6.00	3.14	-3.14	-1.88	1.57	0.86	0.17	0.09	0.22	0.13	0	0	-3.71	-0.000066
8.00	5.14	-5.14	-3.08	2.57	1.41	0.28	0.15	0.37	0.22	0	0	-6.07	-0.000108
Distributions stay the same; all increases go to the Federal Treasury (USFS and BLM)/R													
2.86													
4.00	1.14	-1.14	-0.68									-1.82	-0.000053
6.00	3.14	-3.14	-1.88									-5.02	-0.000145
8.00	5.14	-5.14	-3.08									-8.22	-0.000238

06

0.60 Pers Cons In
0.55 Range Imp In
0.56 Local Govt In
0.00004630 Pers Cons Exp
0.00003660 Range Imp Exp
0.00003330 Local Govt Exp

Table 2. Estimated local community personal income and local employment impact of grazing fee increases, Fall River County, South Dakota. Assumes no decrease in grazing on federal lands. /9

Grazing fee/2	Grazing fee increase	Total USFS AUM's/11	USFS local personal income impacts/12	Total USFS local employment impact/12	Total BLM AUM's/11	Local personal income impacts/12	Total BLM local employment impact/12	Total federal grazing fee increase impact		Percent income decrease in the local economy/13	Total federal grazing fee impact when all increases go to the Federal Treasury		
								Local personal income	Local employment		Local personal income	Local employment	Percent Decrease in local economy/13
2.86													
4.00	1.14	80000.00	-94556.16	-1.15	1279.00	-1721.82	-0.03	-96277.98	-1.18	-0.18	-148252.90	-4.29	-0.283485
6.00	3.14	80000.00	-260444.16	-3.16	1279.00	-4742.57	-0.08	-265186.73	-3.24	-0.51	-408345.70	-11.82	-0.780828
8.00	5.14	80000.00	-426332.16	-5.17	1279.00	-7763.31	-0.14	-434095.47	-5.31	-0.83	-668438.50	-19.34	-1.278171

80000 USFS AUM's
1279 BLM/AUM's
52296483 County Inc.

Table 3. Estimated local community personal income and local employment impact of grazing fee increases (decrease in grazing in response to fee increases), /14 Fall River County, South Dakota.

Grazing fee	Grazing fee increase	Total USFS AUM's/11	Negative response to fee increase on use of Federal AUM's/14	Decrease in use of public grazing in AUM's	Negative impact on local personal income/15*	Negative impact on local employment	Total BLM AUM's	Negative response to fee increase or Federal AUM's/14	Decrease in use of BLM land AUM's	Negative impact on local personal income	Negative impact on local employment	Total Federal grazing fee effect (decreased use)		
												Local personal income	Local employment	
2.86														
4.00	1.14	80000.00	-0.07	-3600.00	-60312.00	-1.90	1279.00	-0.07	-89.53	-964.24	-0.03	-61276.24	-1.934440	
6.00	3.14	80000.00	-0.19	-15200.00	-163704.00	-5.17	1279.00	-0.19	-243.01	-2617.22	-0.08	-166321.22	-5.250623	
8.00	5.14	80000.00	-0.31	-24800.00	-267096.00	-8.43	1279.00	-0.31	-396.49	-4270.20	-0.13	-271366.20	-8.565807	

*This was treated as a decrease in total expenditures on ranch related items less the amount that is purchased by the Livestock Sector from the Feed and Grazing Sector. The per AUM expenditure was calculated using the total receipts per AUM for the area. Total receipts per public grazing unit are \$21.19 (1977 dollars) based on Kerry Ger's ranch budgets, Economic Research Service, Colorado State University, Fort Collins, Colorado. A decrease in final demand in the ranching sector results in a decrease of \$10.57 of local personal income for a public grazing AUM. The corresponding local employment decrease is .000340 per AUM for public grazing.

21.19 Receipts AUM
10.77 Pers Inc - AUM
0.000340 Emp - AUM

Table 4. Estimated local community personal income and local employment impact of grazing fee increases (decreased grazing and reduced ranchers' income impact), Fall River County, South Dakota.

		USFS		BLM		Total Federal		Combined effect of de-		Percent
		Total local	Total local	Total local	Total local	impact of Federal	Combined effect of de-	income due to higher fees/18	Income	
Grazing fee/3	Grazing fee increase	Total local	employment	Total local	employment	grazing fee increase	(decreased income)	Local	personal	decrease
		income lost	lost due	income lost	lost due	(decreased income)	Local	personal	decrease	
		due to fee	to fee	due to fee	to fee	Personal	Local	income	employment	in local
		increase/16	increase/16	increase/16	increase/16	income/17	employt/17	income	employment	economy/13
2.86										
4.00	1.14	-87937.23	-1.07	-1601.30	-0.03	-89538.52	-1.10	-150814.76	-1.93	-0.29
6.00	3.14	-210959.77	-2.56	-3841.48	-0.07	-214801.25	-2.63	-381122.47	-5.25	-0.73
8.00	5.14	-294169.19	-3.57	-5356.68	-0.10	-299525.07	-3.66	-570892.07	-8.57	-1.09

Table 1. Estimated local community personal income and local employment impact of grazing fee increases (per AUM) Millard County, Utah, I-O model (USFS IMPLAN). /1

Grazing fee/2	Grazing fee increase	Decrease in ranchers income/3	Community impact/4	Rangeland improvement fund/5 (50%)		Local government (25%)				Federal treasury (25%)			
				Improvement fund	Community impact/6	Local government expenditure	Community income impact	Local government salaries	Community income impact	Local expenditure	Community income impact	Total local personal income impact/7	Total local employment impact/7
-----USFS-----													
1.40													
2.00	0.60	-0.60	-0.43	0.30	0.21	0.06	0.04	0.09	0.06	0	0	-0.43	-0.000001
4.00	2.60	-2.60	-1.87	1.30	0.91	0.28	0.19	0.37	0.27	0	0	-2.73	-0.000004
6.00	4.60	-4.60	-3.31	2.30	1.61	0.49	0.34	0.66	0.47	0	0	-4.83	-0.000006
8.00	6.60	-6.60	-4.75	3.30	2.31	0.71	0.49	0.94	0.68	0	0	-6.93	-0.000009
(BLM Sect. 3) (Sect. 15 is similar to USFS)/10													
				Rangeland improvement (50%)		Local government (12.5%)				Federal treasury (37.5%)			
1.40													
2.00	0.60	-0.60	-0.43	0.30	0.21	0.03	0.02	0.04	0.03	0	0	-0.73	-0.000006
4.00	2.60	-2.60	-1.87	1.30	0.91	0.14	0.10	0.19	0.13	0	0	-3.15	-0.000027
6.00	4.60	-4.60	-3.31	2.30	1.61	0.25	0.17	0.33	0.24	0	0	-5.57	-0.000047
8.00	6.60	-6.60	-4.75	3.30	2.31	0.35	0.24	0.47	0.34	0	0	-7.99	-0.000068
Distributions stay the same; bill increases go to the Federal Treasury (USFS and BLM)/8													
1.40													
2.00	0.60	-0.60	-0.43									-1.03	-0.000029
4.00	2.60	-2.60	-1.87									-4.47	-0.000126
6.00	4.60	-4.60	-3.31									-7.91	-0.000223
8.00	6.60	-6.60	-4.75									-11.35	-0.000319
0.72	Pers Cons In												
0.70	Range Imp In												
0.69	Local Govt In												
0.00004840	Pers Cons Emp												
0.00005430	Range Imp Emp												
0.00004790	Local Govt Emp												

Table 2. Estimated local community personal income and local employment impact of grazing fee increases, Millard County, Utah. Assumes no decrease in grazing on federal lands. /9

Grazing fee/2	Grazing fee increase	Total USFS AUM's/11	USFS local personal income impacts/12	Total USFS local employment impact/12	Total BLM AUM's/11	Local personal income impacts/12	Total BLM local employment impact/12	Total federal grazing fee increase impact		Percent income decrease in the local economy/13	Total federal grazing fee impact when all increases go to the Federal Treasury		Percent Decrease in local economy/13
								Local personal income	Local employment		Local personal income	Local employment	
1.40													
2.00	0.60	20545.00	-12952.29	-0.02	188968.00	-137231.87	-1.16	-150184.16	-1.18	-0.35	-216217.42	-6.08	-0.51237
4.00	2.60	20545.00	-56126.58	-0.07	188968.00	-594671.43	-5.04	-650798.01	-5.11	-1.51	-936942.14	-26.37	-2.172029
6.00	4.60	20545.00	-99300.87	-0.13	188968.00	-1052110.99	-8.91	-1151411.86	-9.04	-2.67	-1657666.86	-46.65	-3.812820
8.00	6.60	20545.00	-142475.16	-0.19	188968.00	-1509550.55	-12.79	-1652025.71	-12.97	-3.83	-2378391.58	-66.93	-5.513611

20545 USFS AUM's
188968 BLM/AUM's
43136730 County Inc.

Table 3. Estimated local community personal income and local employment impact of grazing fee increases (decrease in grazing in response to fee increases), /14 Millard County, Utah.

Grazing fee	Grazing fee increase	Total USFS AUM's/11	Negative response to fee increase on use of Federal AUM's/14	Decrease in use of public grazing in AUM's	Negative impact on local personal income/15	Negative impact on local employment	Total BLM AUM's	Negative response to fee increase or Federal AUM's/14	Decrease in use of BLM land AUM's	Negative impact on local personal income	Negative impact on local employment	Total Federal grazing fee effect (decreased use)	
												Local personal income	Local employment
1.40													
2.00	0.60	20545.00	-0.04	-821.80	-11538.07	-0.33	188968.00	-0.04	-7558.72	-106124.43	-3.01	-117462.50	-3.35447
4.00	2.60	20545.00	-0.16	-3287.20	-46152.29	-1.31	188968.00	-0.16	-30234.88	-424497.72	-12.03	-470650.00	-13.341788
6.00	4.60	20545.00	-0.29	-5958.05	-83651.02	-2.37	188968.00	-0.29	-54800.72	-769402.11	-21.81	-853053.13	-24.181990
8.00	6.60	20545.00	-0.42	-8628.90	-121149.76	-3.43	188968.00	-0.42	-79366.56	-1114306.50	-31.59	-1235456.26	-35.022193

*This was treated as a decrease in total expenditures on ranch related items less the amount that is purchased by the Livestock Sector from the Feed and Grazing Sector. The per AUM expenditure was calculated using the total receipts per AUM for the area. Total receipts per public grazing unit are \$18.23 (1977 dollars) based on Kerry Coe's ranch budgets, Economic Research Service, Colorado State University, Fort Collins, Colorado. A decrease in final demand in the ranching sector results in a decrease of \$14.04 of local personal income for a public grazing AUM. The corresponding local employment decrease is .000398 per AUM for public grazing.

18.23 Receipts AUM
14.04 Pers Inc - AUM
0.000398 Emp - AUM

Table 4. Estimated local community personal income and local employment impact of grazing fee increases (decreased grazing and reduced ranchers' income impact), Millard County, Utah.

Grazing fee/3	Grazing fee increase	USFS		BLM		Total Federal impact of Federal grazing fee increase (decreased income)		Combined effect of de- creased use & decreased income due to higher fees/18		Percent Income decrease in local economy/13
		Total local	Total local	Total local	Total local	Federal income/17	Local employt/17	Local		
		income lost	lost due	income lost	lost due			personal income	Local employment	
		due to fee increase/16	to fee increase/16	due to fee increase/16	to fee increase/16					
1.40										
2.00	0.60	-12434.20	-0.02	-131742.59	-1.12	-144176.79	-1.13	-261839.29	-3.34	-0.61
4.00	2.60	-47146.32	-0.06	-499524.00	-4.23	-546670.33	-4.29	-1017320.33	-13.34	-2.36
6.00	4.60	-70503.62	-0.09	-746998.80	-6.33	-817502.42	-6.42	-1670555.55	-24.18	-3.87
8.00	6.60	-82635.59	-0.11	-875339.32	-7.47	-958174.91	-7.52	-2193631.17	-35.02	-5.09

Table 1. Estimated local community personal income and local employment impact of grazing fee increases (per AUM) Garfield County, Washington, I-O model (USFS IMPLAN). /1

Grazing fee/2	Grazing fee increase	Decrease in ranchers income/3	Community impact/4	Rangeland improvement fund/5 (50%)		Local government (25%)				Federal treasury (25%)			
				Improvement fund	Community impact/6	Local government expenditure	Community income impact	Local government salaries	Community income impact	Local expenditure	Community income impact	Total local personal income impact/7	Total local employment impact/7
-----USFS-----													
1.40													
2.00	0.60	-0.60	-0.27	0.30	0.15	0.06	0.03	0.09	0.04	0	0	-0.57	-0.000003
4.00	2.60	-2.60	-1.17	1.30	0.64	0.28	0.12	0.37	0.17	0	0	-2.47	-0.000012
6.00	4.60	-4.60	-2.07	2.30	1.13	0.49	0.22	0.66	0.29	0	0	-4.37	-0.000021
6.67	5.27	-5.27	-2.37	2.64	1.29	0.57	0.25	0.75	0.34	0	0	-5.01	-0.000025
(BLM Sect. 3) (Sect. 15 is similar to USFS)/10													
				Rangeland improvement (50%)		Local government (12.5%)				Federal treasury (37.5%)			
1.40													
2.00	0.60	-0.60	-0.27	0.30	0.15	0.03	0.01	0.04	0.02	0	0	-0.65	-0.000005
4.00	2.60	-2.60	-1.17	1.30	0.64	0.14	0.06	0.19	0.08	0	0	-2.80	-0.000022
6.00	4.60	-4.60	-2.07	2.30	1.13	0.25	0.11	0.33	0.15	0	0	-4.96	-0.000039
6.67	5.27	-5.27	-2.37	2.64	1.29	0.28	0.12	0.38	0.17	0	0	-5.68	-0.000045
Distributions stay the same; all increases go to the Federal Treasury (USFS and BLM)/8													
1.40													
2.00	0.60	-0.60	-0.27									-0.87	-0.000012
4.00	2.60	-2.60	-1.17									-3.77	-0.000054
6.00	4.60	-4.60	-2.07									-6.67	-0.000095
6.67	5.27	-5.27	-2.37									-7.64	-0.000109

0.45 Pers Cons In
0.49 Range Imp In
0.44 Local Govt In
0.00007060 Pers Cons Emp
0.00001760 Range Imp Emp
0.00001680 Local Govt Emp

Table 2. Estimated local community personal income and local employment impact of grazing fee increases, Garfield County, Washington. Assumes no decrease in grazing on federal lands. /9

Grazing fee/2	Grazing fee increase	Total USFS AUM's/11	USFS local personal income impacts/12	Total USFS local employment impact/12	Total BLM AUM's/11	Local personal income impacts/12	Total BLM local employment impact/12	Total federal grazing fee increase impact		Percent Income decrease in the local economy/13	Total federal grazing fee impact when all increases go to the Federal Treasury		Percent Decrease in local economy/13
								Local personal income	Local employment		Local personal income	Local employment	
1.40													
2.00	0.60	2605.00	-1486.53	-0.01	6.00	-3.88	-0.00	-1490.41	-0.01	-0.01	-2271.57	-0.03	-0.013359
4.00	2.60	2605.00	-6441.63	-0.03	6.00	-16.82	-0.00	-6458.45	-0.03	-0.04	-9843.47	-0.14	-0.056190
6.00	4.60	2605.00	-11396.73	-0.06	6.00	-29.75	-0.00	-11426.49	-0.06	-0.07	-17415.37	-0.25	-0.100120
6.67	5.27	2605.00	-13056.69	-0.06	6.00	-34.09	-0.00	-13090.78	-0.06	-0.08	-19951.96	-0.28	-0.114703

2605 USFS AUM's
6 BLM/AUM's
17394464 County Inc.

Table 3. Estimated local community personal income and local employment impact of grazing fee increases (decrease in grazing in response to fee increases), /14 Garfield County, Washington.

Grazing fee	Grazing fee increase	Total USFS AUM's/11	Negative response to fee increase on use of Federal AUM's/14	Decrease in use of public grazing in AUM's	Negative impact on local personal income/15*	Negative impact on local employment	Total BLM AUM's	Negative response to fee increase or Federal AUM's/14	Decrease in use of BLM land AUM's	Negative impact on local personal income	Negative impact on local employment	Total Federal grazing fee effect (decreased use)	
												Local personal income	Local employment
1.40													
2.00	0.60	2605.00	-0.05	-130.25	-1246.49	-0.03	6.00	-0.05	-0.30	-2.87	-0.00	-1249.36	-0.030027
4.00	2.60	2605.00	-0.19	-494.95	-4736.67	-0.11	6.00	-0.19	-1.14	-10.91	-0.00	-4747.58	-0.114101
6.00	4.60	2605.00	-0.35	-911.75	-8725.45	-0.21	6.00	-0.35	-2.10	-20.10	-0.00	-8745.54	-0.210186
6.67	5.27	2605.00	-0.50	-1302.50	-12464.93	-0.30	6.00	-0.50	-3.00	-28.71	-0.00	-12493.64	-0.300265

*This was treated as a decrease in total expenditures on ranch related items less the amount that is purchased by the Livestock Sector from the Feed and Grazing Sector. The per AUM expenditure was calculated using the total receipts per AUM for the area. Total receipts per public grazing unit are \$16.08 (1977 dollars), based on Kerry Gee's ranch budgets, Economic Research Service, Colorado State University, Fort Collins, Colorado. A decrease in final demand in the ranching sector results in a decrease of \$9.57 of local personal income for a public grazing AUM. The corresponding local employment decrease is .000230 per AUM for public grazing.

16.08 Receipts AUM
9.57 Pers Inc - AUM
0.000230 Emp - AUM

Table 4. Estimated local community personal income and local employment impact of grazing fee increases (decreased grazing and reduced ranchers' income impact), Garfield County, Washington.

Grazing fee/3	Grazing fee increase	USFS		BLM		Total Federal impact of Federal grazing fee increase (decreased income)		Combined effect of de- creased use & decreased income due to higher fees/18		Percent Income decrease in local economy/13
		Total local income lost due to fee	Total local employment lost due to fee	Total local income lost due to fee	Total local employment lost due to fee	Personal	Local	Local	Local	
		increase/16	increase/16	increase/16	increase/16	income/17	employmt/17	personal income	employment	
1.40										
2.00	0.60	-1412.20	-0.01	-3.69	-0.00	-1415.89	-0.01	-2665.25	-0.03	-0.02
4.00	2.60	-5217.72	-0.03	-13.62	-0.00	-5231.34	-0.03	-9978.92	-0.11	-0.06
6.00	4.60	-7407.88	-0.04	-19.34	-0.00	-7427.22	-0.04	-16172.76	-0.21	-0.09
6.67	5.27	-6528.35	-0.03	-17.04	-0.00	-6545.39	-0.03	-19039.02	-0.30	-0.11

Table 1. Estimated local community personal income and local employment impact of grazing fee increases (per AUM) Sublette County, Wyoming, I-O model (USFS IMPLAN). /1

Grazing fee/2	Grazing fee increase	Decrease in ranchers income/3	Community impact/4	Rangeland improvement fund/5 (50%)		Local government (25%)				Federal treasury (25%)		Total local personal income impact/7	Total local employment impact/7
				Improvement fund	Community impact/6	Local government expenditure	Community income impact	Local government salaries	Community income impact	Local expenditure	Community income impact		
-----USFS-----													
1.40													
2.00	0.60	-0.60	-0.47	0.30	0.25	0.06	0.05	0.09	0.07	0	0	-0.62	-0.000001
4.00	2.60	-2.60	-2.05	1.30	1.08	0.28	0.23	0.37	0.29	0	0	-2.68	-0.000002
6.00	4.60	-4.60	-3.63	2.30	1.91	0.49	0.41	0.66	0.52	0	0	-4.74	-0.000004
8.00	6.60	-6.60	-5.21	3.30	2.74	0.71	0.59	0.94	0.74	0	0	-6.80	-0.000006

Rangeland improvement (50%) (BLM Sect. 3) (Sect. 15 is similar to USFS)/10
Local government (12.5%) Federal treasury (37.5%)

1.40													
2.00	0.60	-0.60	-0.47	0.30	0.25	0.03	0.03	0.04	0.03	0	0	-0.72	-0.000006
4.00	2.60	-2.60	-2.05	1.30	1.08	0.14	0.12	0.19	0.15	0	0	-3.13	-0.000025
6.00	4.60	-4.60	-3.63	2.30	1.91	0.25	0.21	0.33	0.26	0	0	-5.53	-0.000045
8.00	6.60	-6.60	-5.21	3.30	2.74	0.35	0.29	0.47	0.37	0	0	-7.94	-0.000065

Distributions stay the same; all increases go to the Federal Treasury (USFS and BLM)/8

1.40													
2.00	0.60	-0.60	-0.47									-1.07	-0.000026
4.00	2.60	-2.69	-2.13									-4.82	-0.000119
6.00	4.60	-4.60	-3.63									-8.23	-0.000203
8.00	6.60	-4.60	-5.21									-11.81	-0.000291

0.79 Pers Cons In
0.83 Range Imp In
0.83 Local Govt In
0.00004410 Pers Cons Emp
0.00004930 Range Imp Emp
0.00004930 Local Govt Emp

Table 2. Estimated local community personal income and local employment impact of grazing fee increases, Sublette County, Wyoming. Assumes no decrease in grazing on federal lands. /9

Grazing fee/2	Grazing fee increase	Total USFS AUM's/11	USFS local		Total BLM AUM's/11	Local		Total federal grazing fee increase impact		Percent Income decrease in the local economy/13	Total federal grazing fee impact when all increases go to the Federal Treasury		Percent Decrease in local economy/13
			personal income impacts/12	USFS local employment impact/12		personal income impacts/12	Total BLM local employment impact/12	Local personal income	Local employment		Local personal income	Local employment	
1.40													
2.00	0.60	56940.00	-35212.83	-0.03	14482.00	-10451.80	-0.08	-45664.64	-0.11	-0.14	-76707.33	-1.89	-0.238931
4.00	2.60	56940.00	-152588.95	-0.12	14482.00	-45291.15	-0.37	-197880.10	-0.49	-0.62	-343904.07	-8.47	-1.071208
6.00	4.60	56940.00	-269965.07	-0.22	14482.00	-80130.50	-0.65	-350095.57	-0.87	-1.09	-588088.75	-14.49	-1.831805
8.00	6.60	56940.00	-387341.18	-0.32	14482.00	-114969.85	-0.93	-502311.03	-1.25	-1.56	-843779.51	-20.79	-2.628242

56940 USFS AUM's
14482 BLM/AUM's
32104332 County Inc.

Table 3. Estimated local community personal income and local employment impact of grazing fee increases (decrease in grazing in response to fee increases), /14 Sublette County, Wyoming.

Grazing fee	Grazing fee increase	Total USFS AUM's/11	Negative response to fee increase on use of Federal AUM's/14	Decrease in use of public grazing in AUM's	Negative impact on local personal income/15*	Negative impact on local employment	Total BLM AUM's	Negative response to fee increase or Federal AUM's/14	Decrease in use of BLM land AUM's	Negative impact on local personal income	Negative impact on local employment	Total Federal grazing fee effect (decreased use)	Local personal income	Local employment
1.40														
2.00	0.60	56940.00	-0.04	-2277.60	-23823.70	-0.75	14482.00	-0.06	-379.28	-6039.27	-0.19	-29882.96	-0.939714	
4.00	2.60	56940.00	-0.18	-10249.20	-107206.63	-3.37	14482.00	-0.18	-2606.76	-27266.71	-0.86	-134473.34	-4.229611	
6.00	4.60	56940.00	-0.33	-18790.20	-196545.49	-6.18	14482.00	-0.33	-4779.06	-49988.97	-1.57	-246534.46	-7.754287	
8.00	6.60	56940.00	-0.46	-26192.40	-273972.50	-8.62	14482.00	-0.46	-6661.72	-69681.59	-2.19	-343654.10	-10.809005	

*This was treated as a decrease in total expenditures on ranch related items less the amount that is purchased by the Livestock Sector from the Feed and Grazing Sector. The per AUM expenditure was calculated using the total receipts per AUM for the area. Total receipts per public grazing unit are \$17.43 (1977 dollars) based on Harry Gee's ranch budgets, Economic Research Service, Colorado State University, Fort Collins, Colorado. A decrease in final demand in the ranching sector results in a decrease of \$10.46 of local personal income for a public grazing AUM. The corresponding local employment decrease is .000329 per AUM for public grazing.

17.43 Receipts AUM
10.46 Pers Inc - AUM
0.000329 Emp - AUM

Table 4. Estimated local community personal income and local employment impact of grazing fee increases (decreased grazing and reduced ranchers' income impact), Sublette County, Wyoming.

Grazing fee/3	Grazing fee increase	USFS		BLM		Total Federal impact of Federal grazing fee increase (decreased income)		Combined effect of de- creased use & decreased income due to higher fees/18		Percent Income decrease in local economy/13
		Total local income lost due to fee increase/16	Total local employment lost due to fee increase/16	Total local income lost due to fee increase/16	Total local employment lost due to fee increase/16	Personal	Local	Local	Local	
						income/17	employt/17	income	employment	
1.40										
2.00	0.60	-33804.32	-0.03	-10033.73	-0.08	-43838.05	-0.11	-73721.02	-0.94	-0.23
4.00	2.60	-125122.94	-0.10	-37138.74	-0.30	-162261.68	-0.40	-296735.03	-4.23	-0.92
6.00	4.60	-180876.59	-0.15	-53687.43	-0.44	-234564.03	-0.58	-481098.49	-7.75	-1.50
8.00	6.60	-209164.24	-0.17	-62083.72	-0.50	-271247.96	-0.68	-614902.05	-10.61	-1.92

Table 1. Estimated local community personal income and local employment impact of grazing fee increases (per AUM) State of Oregon, I-O model (USFS IMPLAN). /1

Grazing fee/2	Grazing fee increase	Decrease in ranchers income/3	Community impact/4	Rangeland improvement fund/5 (50%)		Local government (25%)			Federal treasury (25%)			Total local personal income impact/7	Total local employment impact/7
				Improvement fund	Community impact/6	Local government expenditure	Community income impact	Local government salaries	Community income impact	Local expenditure	Community income impact		
-----USFS-----													
1.40													
2.00	0.60	-0.60	-0.80	0.30	0.29	0.06	0.03	0.09	0.11	0	0	-0.88	-0.00013
4.00	2.60	-2.60	-3.48	1.30	1.25	0.28	0.15	0.37	0.50	0	0	-3.82	-0.00057
6.00	4.60	-4.60	-6.16	2.30	2.21	0.49	0.26	0.66	0.88	0	0	-6.76	-0.00101
7.70	6.30	-6.30	-8.44	3.15	3.02	0.68	0.36	0.90	1.20	0	0	-9.26	-0.00138
(BLM Sect. 3) (Sect. 15 is similar to USFS)/10													
Rangeland improvement (50%)				Local government (12.5%)				Federal treasury (37.5%)					
1.40													
2.00	0.60	-0.60	-0.80	0.30	0.29	0.03	0.02	0.04	0.06	0	0	-1.00	-0.00019
4.00	2.60	-2.60	-3.48	1.30	1.25	0.14	0.07	0.19	0.25	0	0	-4.33	-0.00084
6.00	4.60	-4.60	-6.16	2.30	2.21	0.25	0.13	0.33	0.44	0	0	-7.66	-0.00149
7.70	6.30	-6.30	-8.44	3.15	3.02	0.34	0.18	0.45	0.60	0	0	-10.49	-0.00204
Distributions stay the same; all increases go to the Federal Treasury (USFS and BLM)/8													
1.40													
2.00	0.60	-0.60	-0.80									-1.40	-0.00038
4.00	2.60	-2.60	-3.48									-6.08	-0.00163
6.00	4.60	-4.60	-6.16									-10.76	-0.00288
7.70	6.30	-6.30	-8.44									-14.74	-0.00394

1.34	Pers Cons In												
0.96	Range Imp In												
0.53	Local Govt In												
0.00006250	Pers Cons Emp												
0.00004470	Range Imp Emp												
0.00003710	Local Govt Emp												

Table 2. Estimated local community personal income and local employment impact of grazing fee increases, State of Oregon. Assumes no decrease in grazing on federal lands. /9

Grazing fee/2	Grazing fee increase	Total USFS AUM's/11	USFS local personal income impacts/12	Total USFS local employment impact/12	Total BLM AUM's/11	Local personal income impacts/12	Total BLM local employment impact/12	Total federal grazing fee increase impact		Percent income decrease in the local economy/13	Total federal grazing fee impact when all increases go to the Federal Treasury		Percent Decrease in local economy/13
								Local personal income	Local employment		Local personal income	Local employment	
1.40													
2.00	0.60	381074.00	-335247.95	-5.02	1059107.00	-1057912.86	-20.54	-1393160.80	-25.57	-0.01	-2022014.12	-54.01	-0.010161
4.00	2.60	381074.00	-1455281.59	-21.77	1059107.00	-4584289.05	-89.02	-6039570.64	-110.79	-0.03	-8762061.20	-234.03	-0.044031
6.00	4.60	381074.00	-2573315.24	-38.51	1059107.00	-8110665.24	-157.50	-10685980.48	-196.01	-0.05	-15502108.28	-414.05	-0.077901
7.70	6.30	381074.00	-3529630.28	-52.74	1059107.00	-11108085.00	-215.70	-14637715.28	-268.44	-0.07	-21231148.30	-567.07	-0.106691

381074 USFS AUM's
1059107 BLM/AUM's
1989974339 County Inc.

Table 3. Estimated local community personal income and local employment impact of grazing fee increases (decrease in grazing in response to fee increases), /14 State of Oregon.

Grazing fee	Grazing fee increase	Total USFS AUM's/11	Negative response to fee increase on use of Federal AUM's/14	Decrease in use of public grazing in AUM's	Negative impact on local personal income/15*	Negative impact on local employment	Total BLM AUM's	Negative response to fee increase or Federal AUM's/14	Decrease in use of BLM land AUM's	Negative impact on local personal income	Negative impact on local employment	Total Federal grazing fee effect (decreased use) local personal income	Local employment
1.40													
2.00	0.60	381074.00	-0.05	-19053.70	-346396.27	-8.50	1059107.00	-0.05	-52955.35	-962728.26	-23.62	-1309124.53	-32.16037
4.00	2.60	381074.00	-0.19	-72404.06	-1316305.81	-32.29	1059107.00	-0.19	-201230.33	-3658367.40	-89.75	-4974673.21	-122.040939
6.00	4.60	381074.00	-0.35	-133375.90	-2424773.86	-59.49	1059107.00	-0.35	-370687.45	-6739097.84	-165.33	-9163871.70	-224.012256
7.70	6.30	381074.00	-0.50	-190537.00	-3463962.66	-84.98	1059107.00	-0.50	-529553.50	-9627282.63	-236.18	-13091245.29	-321.160365

*This was treated as a decrease in total expenditures on ranch related items less the amount that is purchased by the Livestock Sector from the Feed and Grazing Sector. The per AUM expenditure was calculated using the total receipts per AUM for the area. Total receipts per public grazing unit are \$18.18 (1977 dollars), based on Kerry Cee's ranch budgets, Economic Research Service, Colorado State University, Fort Collins, Colorado. A decrease in final demand in the ranching sector results in a decrease of \$16.08 of local personal income for a public grazing AUM. The corresponding local employment decrease is .000446 per AUM for public grazing.

16.08 Receipts AUM
18.18 Pers Inc - AUM
0.000446 Emp - AUM

Table 4. Estimated local community personal income and local employment impact of grazing fee increases (decreased grazing and reduced ranchers' income impact), State of Oregon.

Grazing fee/3	Grazing fee increase	USFR		BLM		Total Federal impact of Federal grazing fee increases (decreased income)		Combined effect of de- creased use & decreased income due to higher fees/18		Percent Income decrease in local economy/13
		Total local income lost due to fee increase/16	Total local employment lost due to fee increase/16	Total local income lost due to fee increase/16	Total local employment lost due to fee increase/16	Personal	Local	Local personal income	Local employment	
						income/17	employt/17			
1.40										
2.00	0.60	-310485.55	-4.77	-1005017.21	-19.52	-1323502.76	-24.29	-2632627.29	-32.12	-0.01
4.00	2.60	-1178778.09	-17.63	-3713274.13	-72.11	-4892052.22	-89.74	-9866725.43	-122.04	-0.05
6.00	4.60	-1673954.91	-25.03	-5271932.40	-102.37	-6945887.31	-127.40	-16109759.01	-224.81	-0.08
7.70	6.60	-1764815.14	-26.37	-5554042.50	-107.85	-7318857.64	-134.22	-20410102.93	-321.16	-0.10

FOOTNOTES

- 1/ U.S. Forest Service IMPLAN (an Input-Output Model) Rocky Mountain Forest and Range Experiment Station, USDA Forest Service, Fort Collins, Colorado.
- 2/ The fees evaluated are at the \$2.00, \$4.00, \$6.00, and \$8.00 level or up to the 1983 private grazing lease rate for the State (Rates are enclosed as Appendix III). The 1983 federal grazing fee is \$1.40 except for the national grasslands fee, which is \$2.04.
- 3/ Without a change in the ranchers expenditure patterns, an increase in the cash cost, such as grazing fee, will decrease his income (or increase his loss) and cash flow.
- 4/ A decrease in the ranchers income will decrease his expenditure. His reduced spending will also affect other income in the community. For this estimate, the household expenditure patterns of the area from IMPLAN were used to estimate the impacts of reduced household income.
- 5/ For the WWS and Section 15 BLM lands, the fees collected are distributed so that (in general) 50% of the fee is returned to the local area for rangeland maintenance and investment projects—the construction section in IMPLAN, 25% is returned to local government (county roads and schools) while 25% is returned to the U.S. Treasury. For BLM Section 3 lands, this formula is 50% (rangeland investments), 12.5% local government, and 37.5% federal treasury. This is, only a very general description of the fee disbursement formula; these very general formulas are used to estimate the potential impacts of grazing fee increases.
- 6/ An increase in grazing fee would increase the amount returned to the local area. These expenditures impact the local area directly, as well as indirectly.
- 7/ The cumulative local income effect of a grazing fee increase from \$1.40 to \$2.00 per AUM in a county area might be a \$-.88 decrease in local income. This includes the loss of \$.60 of ranchers income and the \$.80 decrease in community personal income that is related to the ranchers \$.60 income decrease. With the same distribution formula, the local area would receive an additional amount as fees are increased. Local income related to rangeland improvement expenditures would increase by \$.30, while local income related to local government expenditures of \$.06 would increase by \$.03 plus the original \$.09 local government salary income. The local employment effects are analyzed similarly except that the decrease in ranchers' income would not necessarily mean a reduction in employment; this is reduced only as employment is related to his decreased expenditures. See Table 1 State of Oregon for numerical example (p. 106).
- 8/ If a change were to be made in the grazing fee formula that were to increase grazing fees with all increases going to the Federal Treasury, there would be no positive local income effects.
- 9/ This analysis assumes that the rancher makes no reduction in his use of federal grazing. The level of use stays the same and all costs are absorbed through lower rancher income. This estimate would be the smallest of the rancher community impacts and should be considered a near term impact until adjustments are made.
- 10/ For Section 15 BLM Lands, the grazing fee funds are distributed in a similar manner to the WWS disbursements.
- 11/ Total AUM's permitted by the WWS and BLM. Actual use or actual permits sold may vary. For large differences in permitted and actual use, the estimates impacts should be reduced by the difference.
- 12/ Total WWS and BLM AUM's affected are taken from the previous column and multiplied by the total personal income impact per AUM.
- 13/ Total county income divided into local personal income impact.
- 14/ Over time, adjustments most likely will be made by ranchers according to the marginal value product of the federal grazing permits. Assuming a triangular distribution of the MVP's to the rancher (that is; the private lease grazing rate is taken as the mean on equal distribution of MVP's), a reaction to price increases are estimated. This should be considered as a maximum reduction over a medium time range impact. A long range change (not analyzed here) could occur where the ranchers that considered the MVP of federal grazing to be that above the private lease rate accumulate the federal grazing from these ranchers who are in no position to make use of the federal grazing with low MVP's. This would assume that grazing privileges were transferable. For an explanation of the triangular distribution, see Appendix I.
- 15/ As a result of a price increase, it was assumed that the ranch would reduce his use of federal grazing. However, while he may reduce use of federal AUM's, there is a personal income and employment loss related to the AUM's that are retained. This column estimates these losses of the remaining AUM's.
- 16/ Total local impact of reduced local income and employment as a result of decreased ranchers income. WWS and BLM combined.
- 17/ If a change were to be made in the grazing fee formula that would increase fees with all increases going to the Federal Treasury, the total combined effect would increase.
- 18/ Combined impact of decreased use and decreased income due to higher fees are divided by 1986 total area income.



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